



I.M.A.G.S.B. NEWS BULLETIN

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INDIAN MEDICAL ASSOCIATION, GUJARAT STATE BRANCH

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STATE PRESIDENT'S MESSAGE

Dear Doctor Colleagues,

I feel extremely happy and humbled, upon receiving warm best wishes, happy and cordial congratulations by phone, letters and messages. Such a warm welcome to new president, gives me encouragement as well as an additional sense of responsibility, to work more, work hard and work with zest and zeal, for the IMA-GSB.

Having received so many invitations to visit IMA branches and participate in their scientific programs, I am very enthusiastic to visit as many functions as possible. I want to visit maximum branches, and encourage new doctors as prospective members to join IMA, and make them interested in enrollments in various IMA schemes.

Many NGOs are coming forward to co-work with us in public health education and improvement of understanding regarding living life healthy and longer.

Many branch have formed social media groups of local members. If we form an umbrella groups of office bearers of each branch, we can communicate to each member in a faster and better way, this will also help in forming a quick action task force.

The medico spiritual conference, organized on 18th December 2022, during the PSM-100 Centennial celebration at Pramukh Swami Nagar (Ognaj, Ahmedabad) on the joint aegis of IMA-GSB and BAPS was a grand success. More than 1800 members took benefit of medical and spiritual lectures, excellent sattvik prasadam food, as well as a guided VIP tour, an inspirational visit of Pramukh Swami Nagar.

Also, it is a very happy news that, in collaboration with Gujarat National Law University (GNLU), beginning from 1 January 2023; IMA-GSB is starting a 1 year distance learning Law course, a post graduate diploma in medical law policy and ethics (PGDMLPE), which should be joined by all our members and become well oriented and reasonably proficient in knowledge and field of laws (civil and criminal) pertaining to our medical practice. This is the need of the hour, and which will become a dire necessity in coming years, sooner than later.

On 04-12-2022, on occasion of World AIDS Day, Ahmedabad Medical Association (AMA) and State AIDS control Society jointly organized a one day CME, in which many state and national faculties gave didactic lectures, along with many scientific papers being presented. We also honored 50 Centurion (100 times) Blood Donors, which was a great pleasure.

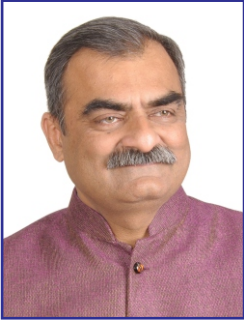
I am especially thankful to AMA president Dr. Jitendra Shah, secretary Dr. Gargi Patel, and our state secretary Dr. Mehul Shah, for this wonderful event organization, and for welcoming and honoring me in this function.

I hope and pray, that together we can make IMA-GSB more vibrant in future.

JAY IMA, Jay Jay Garvi Gujarat, Jay Hind.

એ એક મોટી વિડંબણ છે ભગવાન, કે મારી આજીવિકાનો આધાર લોકોની માંદગી છે. હું તો માત્ર નિમિત્ત છું, એ હમેશાં યાદ રાખી શકું તેવી મને શ્રદ્ધા અને શક્તિ આપ જે, પ્રભુ, પીડિતો પ્રત્યે અનુકંપા ભરેલી લાગણી દેજે, દીન હીન વિહીન ગરીબોને ઉપયોગી બનું એવી બુદ્ધિ અને સમજણ આપજે.

DR. MAHAVIRSINH M. JADEJA
President, G.S.B., I.M.A.



HON. STATE SECRETARY'S MESSAGE

Festive Greetings.

It is that time of the year when healthy season is prevalent all around and celebrations and revelries are the norm. This is that time of the year when all festivals are celebrated with religious fervour. The Indian diaspora has tided over the pandemic with resoluteness and an eagerness to fight for survival in a new world order.

A lot of new docs on the block – if I may so, the younger generation of doctors are taking up the cudgels to reform and actively participate in various ventures initiated under the IMA-GSB banner. It is a healthy and pleasant sign to have newer entrepreneurs and technocrats to share their ideas and vision for the future growth of medicine. But at the same time, it is really important for all of us to involve ourselves in various scientific activities which would really strengthen our insight into the modern methods of medical practice.

It would really be of great succour if we could publish as many research articles as possible highlighting our developments in various aspects of medical practice. This really harbours good for our fraternity and adds that much needed lapel of honour to our existing scenario.

The highly anticipated and much talked about Medico Spiritual Conclave held under the aegis of BAPS celebrating the 100th anniversary of Pramukh Swami Maharaj was a tremendous success. Considering the humongous scale on which the event was held and the number of registrations for the conclave, it really was a herculean task for the IMA-GSB to execute, manage and accomplish the event successfully.

But the team of doctors and organising committee held their nerves and the whole event went off peacefully and serenely. There was a sense of joy and happiness on everyone's face looking at the facilities, the venue and the array of orators who enlightened us with their insights.

The end result –

We are all doctors of Humans. Let us go one step ahead and become doctors of angels.

A very good initiative has been introduced by IMA-GSB. It has tied up with Gujarat National Law University to start a fellowship course in Medical ethics and law. A real good step for all those interested to educate themselves in all aspects of medicolegal implications in our practice.

This course will duly help us understand the intricacies of medical law and educate us to face upto future challenges. Hope to have maximum registrations for this interesting course.

When you have the fear of suffering within you, then you are half a step.

When you are half a step, then you are half a life.

Dr. Mehul J. Shah
(Hon. State Secy., G.S.B.,I.M.A.)

FROM THE DESK OF EDITORS



Dear friends,

Season's Greetings from Gujarat Medical Journal, IMA-GSB !

We are thankful to all the central council members of GSB IMA for putting their faith, trust and confidence in us and giving the charge of prestigious Gujarat Medical Journal (GMJ) for this year. On our side, we promise to see that the faith and trust that is put in us is full filled and for that, we shall try our best.

Here, we want to tell our members about the procedure that we are adopting in selection of an article for GMJ. We ask the author to send the article on CD, and three physical copies, of which one copy bears names, addresses, etc., of authors but two other copies, don't have any name or address of authors, they contain only the material of the article. On receiving this our office clerk puts code number on it. Articles are known from its code number only. GMJ editor is given the copy which doesn't have the name, etc. of the author. And editor then sends the said article for review to a retired professor or HOD or having that level of expertise in the subject (whom we call "referee" or "reviewer"). So the reviewer also doesn't know about the author. This procedure is adopted since years and we shall continue that.

Our country and particularly, Gujarat has entered in the field of medical tourism. People from developed and under developed countries come here for treatment and we provide world best treatment to them at a cheaper rates than that is available in developed countries. Our hospitals and expertise are world class and that pushes the medical tourism in Gujarat far ahead. From our own domestic population also we get large number of patients. Now we have more than two dozen medical colleges (and few new will start functioning from next year). Many of them are in smaller towns also. That will help us in collecting data from urban and rural areas. This provides opportunities for research to our doctors. Now we have better infrastructure facilities for data collection and access to world data, for comparison. It has provided a big boost to research work in our state. We appeal our colleagues to send their research articles and papers for publication in GMJ. This will help our other colleagues and also government in handling and controlling certain diseases. Government will also be able to determine where more efforts are required.

Without making any compromise with our laid down policy, we have made all the efforts to make GMJ more informative, more interesting and more popular so that large number of our colleagues read it and utilize the knowledge and information provided in it. For this, we welcome your suggestions and comments also.

We have created our own online article submission and management portal at gmjonline.in, which is ready to be operational. We prepared it with use of OJS software.

The requirement for DOAJ Indexation is completed and within short time we shall apply for that also. By the time we are indexed with Index Copernicus International.

Our sincere thanks to GSB President Dr. Mahavirsinh M. Jadeja and Hon. Secretary Dr. Mehul Shah for encouragement and suggestions, and giving us free hand in publication of this journal. We are grateful to them. We are also grateful to GSB past presidents Dr. Jitubhai Patel, Dr. Mahendrabhai Desai and Dr. Bipinbhai Patel & Dr. Yogendrabhai Modi for their guidance and help. Dr. Urvesh Shah, Dr. Chinmay Shah, Dr. Ashish Bhojak, Dr. Divyeshkumar Panchal and their team worked very hard for online platform & try to getting our journal at par with the requirement of NMC norms.

With regards,

DR. KAMLESH B. SAINI

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Prospective Study: An Effect of Maternal Hydration in Improving Afi in Oligoamnios Patients

Dr Nirav Patel*, Dr Roma Dalal**, Dr Ajesh N Desai***

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KEY WORDS : Amniotic fluid index (AFI), oligoamnios, oral hydration therapy

ABSTRACT

Background : Amniotic fluid volume (AFV) is an important parameter in the assessment of fetal wellbeing since it provides a number of functions vital to fetal development such as a supportive environment for growth, protection from trauma and infection and a medium which allows fetal movement thus promoting the development of the musculoskeletal system. AF also prevents a possible compression of the umbilical cord and placenta thereby protecting the fetus from vascular and nutritional compromise. Reduced amniotic fluid may be responsible for the problems of malpresentations, umbilical cord compression and meconium staining of amniotic fluid in the liquor. Simple intervention by maternal hydration has been reported as a way of increasing amniotic fluid volume in order to reduce these problems.

Objective : To assess the effect of maternal hydration in improving liquor volume in patients with oligoamnios.

Study Design : Prospective nonrandomized interventional study.

Materials and Methods : 60 singleton pregnant females with gestational age >34 weeks with AFI <5 cms taken into study. All patients received 2 liter of water per oral in 2 hours of duration every day. The treatment was continued till the liquor improved significantly. Mean increase in liquor, mode of delivery and neonatal outcome were studied.

Results : The mean gestational age at the time of recruitment was 34.3 weeks. The mean AFI at the time of enrolment was 4.02(SD 0.65). These patients were delivered at 36.3 weeks, and thus, pregnancy could be prolonged by 2.0 weeks. The mean AFI at the end of therapeutic intervention was 7.5 (SD 0.84), and thus, an AFI increase of 3.48cm could be obtained. There was only one neonatal morbidity in these patients. Significant improvement in liquor volume was obtained in these patients after intervention with oral hydration.

Conclusion : Oral hydration therapy resulted in significant improvement in liquor and prolongation of duration of pregnancy by 2.0 weeks which decreases incidence of preterm labour induction and neonatal morbidity. Thus, oral hydration therapy seems to be promising in improving fetal outcome in pregnancies complicated by decreased liquor.

INTRODUCTION

Amniotic fluid has various functions during pregnancy. It helps in normal fetal lung development, provides space for fetus to develop normally and prevents umbilical cord compression.^[1]

Amniotic fluid volume (AFV) is an important parameter in the assessment of fetal wellbeing since it provides a number of functions vital to fetal development such as a supportive environment for growth, protection from trauma and infection and a medium which allows fetal movement thus promoting the development of the musculoskeletal system. Amniotic fluid also prevents a possible compression of the umbilical cord and placenta

thereby protecting the fetus from vascular and nutritional compromise.^[2]

Amniotic fluid volume is around 30 ml at 10 weeks of gestation; afterwards it increases by 25 to 30ml per week till 36-38 weeks when it plateaus at about 1 liter. Thereafter it falls by about 100-150 ml per week so that by 42 weeks it is less than 200 ml.^[3,4]

Amniotic fluid index (AFI) that is four quadrant assay can be measured by ultrasound to quantitatively predict the amount of amniotic fluid. An AFI of 8 cm and more is considered as a normal, between 5 cm and 8 cm as low normal, and less than 5 cm is considered as oligoamnios.^[5,6,7] When it is less than 3 cm, the actual amount may be reduced to only a few milliliters of viscid fluid.

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Chronic placental insufficiency is the state in which the fetus is trying to redirect blood flow to vital organs such as brain and heart at the cost of renal circulation. It will lead to significant reduction in urine output, which results decreased intrauterine space for adequate fetal growth then pressure from all sides of uterine walls may lead to cord compression, pressure induced deformities, variation in fetal heart rate during labour, meconium attained amniotic fluid and increased chances of operative deliveries, low APGAR scores and increased admission in NICU.^[2]

Many authors suggested that maternal hydration therapy restore amniotic fluid volume to its normal range. Maternal hydration may increase amniotic fluid volume by improving utero placental perfusion and fetal diuresis.

MATERIALS AND METHODS

This was a prospective interventional study done in the Department of Obstetrics and Gynaecology, GMERS SOLA, after getting approval from the institutional research ethics committee. Our ethical committee did not approve enrolling the control group, as the subjects in the control group will be deprived of the benefit.

INCLUSION CRITERIA

- Singleton pregnancy
- Non anomalous fetus
- Intact membranes at the time of selection

EXCLUSION CRITERIA

- Patient in labor
- Severe IUGR requiring urgent delivery
- Congenital anomalies
- Intrauterine death
- Multiple pregnancies
- Post date
- PROM and PPRM
- Medical diseases complicating pregnancy

The amniotic fluid volume was estimated as AFI in accordance with the four-quadrant technique. The AFI was calculated by summing up the maximum vertical fluid pockets (measured in cm) in each of the four quadrants.

60 singleton pregnant females with gestational age >34 weeks with AFI <5 cms were taken up for trial. All patients were submitted for elaborate clinical examination and obstetric examination along with detailed history taking to satisfy the inclusion and exclusion criteria. Quadrants, as described by Phelan et al.

All patients were received 2 liter of water per oral in 2 hours of duration every day.

Patients were closely monitored for hemodynamic alterations. All women complied with the protocol and no maternal complications due to therapeutic intervention were found. No patients were discontinued from the study because of any adverse effects. The treatment was continued till the liquor improved significantly. Whenever there were additional risk factors, appropriate management measures as per the standard protocol were taken in addition to the above-mentioned intervention. All patients were monitored regularly with serial non stress test (NST) and biophysical profile (BPP) till delivery. However, patients were considered for delivery if the liquor remained less than 5 cm irrespective of the gestational age or when the liquor remained low normal (in the range of 5-8 cm beyond 36 weeks). Mean increase in liquor, intervention delivery interval, and neonatal outcome were studied.

The examinations were performed with a convex 3.5-MHZ probe mindray ultrasonography machine.

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 14, and statistical comparisons were made before and after intervention. Student's t-test was used to find the statistical significance of the observations. The differences were considered significant if the P value was less than 0.05 and highly significant if it was <0.01.

All of them were followed up till delivery to obtain maternal and perinatal outcomes.

RESULTS

Data of patients' age, parity, gestational age at recruitment and mean AFI before intervention are summarized in Table 1.

The majority of cases were primigravidae. (70%). Mean gestational age is 34.3 weeks. Mean AFI before intervention is 4.02±0.65 cm.

The end point of the intervention was to achieve reasonable gestational age of 36-37 weeks in our study. The average gestational age at the time of delivery was 36.3 weeks, and thus, pregnancy could be prolonged by 2.0 weeks. The prolongation of gestation was beneficial for the fetus as it improved their intrauterine stay and growth.

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Table-1 Maternal Characteristics

Total number of patients	Total=719 N=(%)
Age	60
Parity	24.71±3.18 years
	42 primigravida (70%) 18 multigravida (30%)
Mean gestational age	34.3 weeks
Mean AFI before intervention	4.02±0.65 cm

Table-2 Mode of Deliveries

Mode of delivery	Total (out of 60)	
Vaginal deliveries	44	73.33%
Spontaneous labor	33	55%
VBAC	3	5%
vaginal deliveries f/b induction	6	10%
Instrumental vaginal deliveries	2	3.33%
Cesarean deliveries	16	26.66%
Emergency lscs	11	18.33
Elective lscs	5	8.33

Table-3 Maternal intervention and improvement in AFI

Type of intervention	Pre treatment mean AFI	Post treatment mean AFI	Increase in mean AFI	t value	p value	Significance
Oral hydration therapy	4.02(0.65)	7.5(0.84)	3.48	25.37	<0.0001	Extremely significant

Table-4 Neonatal outcome

Birth weight	2.56±0.45 KG
APGAR score <7 at 5min	4 (6.66%)
APGAR score e"7 at 5 min	55 (91.66%)
Still birth	1
NICU admission	8
INVASIVE VENTILATION	1
CPAP	2
Transient tachypnea	3

36.3 weeks, and thus, pregnancy could be prolonged by 2.0 weeks. The prolongation of gestation was beneficial for the fetus as it improved their intrauterine stay and growth.

The obstetric outcome of these patients has been detailed in Table 2. It can be seen that 44 patients delivered vaginally [33-spontaneous labor, 3 VBAC, 6 vaginal delivery f/b induction, 2 instrumental deliveries.] 16 patients delivered by cesarean section [11 emergency LSCS and 5 elective LSCS].

The overall improvement in AFI according to the type of intervention is shown in Table 3.

Sixty patients received oral fluid therapy (mean duration of treatment: 18.0 days, minimum: 12 days, maximum: 24 days). The overall increase in liquor was found to be 3.48 cm [pre-treatment AFI 4.02 cm (SD 0.65), post-treatment AFI 7.5 cm (SD 0.84); $P < 0.05$]. The increase was statistically significant.

Table 4 shows the neonatal outcome in 60 singleton pregnancies. There was one incident of stillbirth. There were 4 neonates who had APGAR score at 5 min was below 7.

8 neonates were admitted in NICU. Out of 8, one baby developed respiratory distress and required invasive ventilation. 2 neonates required to be kept on CPAP. 3 babies developed transient tachypnea and were kept in NICU.

There was no incidence of hypoxic ischemic encephalopathy, or sepsis in any of the babies.

DISCUSSION

Amniotic fluid has multiple functions. Its main role is to permit fetal lung development by two-way movement of fluid into fetal bronchioles, and early severe oligoamnios is associated with pulmonary hypoplasia in the neonate. Amniotic fluid allows free movements of growing fetus and prevents limb contractures. It prevents adhesions between fetus and amnion and protects the fetus from mechanical injury. Reduction in amniotic fluid in labor is associated with variable amount of umbilical cord compression and fetal hypoxia.

Maternal hydration is a well-known therapeutic intervention to improve the placental fluid transfer. With respect to the physiological principles, water transfer between mother and fetus is regulated by osmotic forces, in which electrolyte gradients determine net transplacental water exchange. In an ovine study with maternal fluid overloading, it was reported that a reduction of maternal fetal osmotic gradient facilitated water transfer to the fetus, leading to an increase in fetal urine production.^[13]

To avoid preterm labor induction and to prevent its serious consequences for the mother and newborn, therapeutic intervention is desirable to prolong the pregnancy, so that risks of prematurity are minimized and the obstetrician buys time to administer steroid prophylaxis.

CONCLUSION

Management of pregnant women with oligoamnios is a challenging situation for an obstetrician. To avoid preterm labour induction and to prevent its serious consequences for the mother and newborn, therapeutic intervention is desirable to prolong pregnancy, so that risk of prematurity are minimized.

Keeping in mind the cost of rearing a preterm baby in NICU, oral hydration therapy can be used as cheap and a feasible method in resource poor countries.

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Study on Seropositivity of HIV, HBV, HCV & Syphilis in Blood Donors (Two Years Study)

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KEY WORDS : Transfusion transmitted diseases, HIV, HBV, HCV, Syphilis, Malaria, Seroprevalence

ABSTRACT

Background & Objectives : To estimate the prevalence of different transfusion transmitted disease like HIV, HBsAg, HCV, Malaria and Syphilis among the blood donors and to see the age and sex wise distribution of transfusion transmitted disease.

Methods : The cross-sectional study included all the blood donors of P.D.U. Medical College & Hospital, Rajkot for a period of two years. The mandatory screening of the Transfusion Transmitted Infections were done under the criteria set by "NACO". Serum samples were tested for Anti HIV IgG and IgM antibodies, HBsAg, Anti-HCV IgG and IgM, anti-treponema pallidum IgG and IgM and IgA and malaria using different kits and all the positive samples were confirmed with other set of tests.

Results : There were 36,184 donors among them 1,525 were females and 34,362 were males. A total of 13,278 donors were in the age group of 18 to 30 years, 14,714 were in group 31-40 years, 5,383 were in group 41-50 years, 1,435 in 51-60 years and 1,077 were in 61 years and above. The seroprevalence of HIV, HBsAg, HCV, VDRL and Malaria were 0.12%, 0.40%, 0.03%, 0.20% and 0% respectively.

INTRODUCTION

Blood is the elixir of life.^(4,1) There is no substitute for blood. Scientists agreed that artificial blood can not be manufactured by man in the foreseeable future.⁽¹⁾ Blood donation saves millions of lives of millions of people worldwide.⁽³⁾

However, although blood transfusion plays an important role in the supportive care of medical and surgical patients, unsafe transfusion practices also put millions of people at risk of transfusion-transmissible infections (TTIs)⁽³⁾. Use of unscreened blood transfusion keep the patient at risk of acquiring many transfusion transmitted diseases (TTDs) like Hepatitis viruses (HBV, HCV), Human immune deficiency virus (HIV). TTIs were considered a great threat to blood transfusion safety for recipient and constitute serious public health problems with highest risk groups exposed to these blood borne pathogens being anemic patients (both adults and children), victims of major trauma, and hemorrhagic pregnant women.

This however, can be managed through the elimination

of commercial blood donors, a greater monitoring of voluntary donors and a mandatory pre-transfusion evaluation of blood units for HIV, Hepatitis Band C, VDRL, Malaria etc⁽¹⁾. preventing the transmission of infectious diseases through blood transfusion in developing countries is difficult given that their sources required are not always available⁽⁷⁾.

To maintain and enhance the safety of the blood supply and meet the increasing demand for blood, it is important to identify and retain safe and healthy donors⁽²⁾ Testing of donated blood alone is insufficient to protect patients acquiring infections through transfusion because of the risk of "window period" infection⁽²⁾, and problems are also due to the presence of asymptomatic carriers in the society, the genetic variability in the viral strains and inadvertent laboratory errors⁽⁵⁾. Only continuous improvement and implementation of donor selection like Avoiding paid donors, selecting blood donors through questionnaires, and limiting the number of transfusions, sensitive screening tests, and effective in activation procedures can ensure the elimination, or at least reduction, of the risk of acquiring TTIs^(3,4).

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MATERIALS AND METHODS

Many strategies that have been used to reduce Transfusion Transmitted Infection (TTI) includes improving donors selection, testing the donated blood for specific antibodies for infectious agents, reducing exposure to all ogenic blood by use of auto logo us transfusion and changing transfusion guidelines to use blood more conservatively⁽⁷⁾.

Since most of the routes for transmission prevail in this country, the spread of HBV, HCV, HIV, VDRL and malaria has become a great threat⁽¹⁾. Prevalence of human immunodeficiency virus (HIV) is increasing in the world and India, with an estimated 5.7 million cases of HIV affects the blood safety for transfused recipients⁽¹⁰⁾. The prevalence of HIV in different parts of India varies widely. It is particularly high in the western and southern parts⁽⁵⁾. Therefore, it should be mandatory that blood be screened for transfusion transmitted infectious diseases markers such as antibodies to HIV and HCV, surface antigen to HBV, VDRL and malaria. HIV is one of the human retro viruses that preferentially infects and kills helper (Cd4) T lymphocytes, resulting in the loss of cell mediated immunity and a high probability that the host will develop opportunistic infections⁽¹⁾. The major routes of transmission for HIV have been heterosexual contact (42%), especially with commercial sex workers (CSWs), blood transfusion (15%) and intravenous drug use (15%)⁽⁵⁾. In upto 15 percent of total patients infected with HIV, blood transfusion has been the responsible mechanism of transmission⁽⁵⁾. The presumptive diagnosis of HIV infection is made by the detection of antibodies by ELISA. Because there are some false positive results with this test, the definitive diagnosis is made by western blot analysis⁽¹⁾.

OBJECTIVES OF THE STUDY

1. To study these roprevalence of the HIV, HBsAg, HCV, VDRL and malaria in blood donors.
2. To compare these roprevalence of these disease in male and female donors.
3. To compare gender wise and age wise seroprevalence of the transfusion transmitted infections among blood donors.

SOURCE OF DATA:

The study was conducted in Blood Bank, Department of Pathology, Pandit Dindayal Upadhyay Medical College, Rajkot, India from 1st September 2019 to 31st August 2021. Blood samples were collected from blood donors who came to donate at blood bank or donated in voluntary blood donation camps.

Inclusion Criteria:

1. All donors who were aged 18 to 65 and appeared fit were included according to the national blood bank criteria.
2. The total sample number included the number of blood donors donating blood only once during the study period.
3. The donors were pre counseled and examined for their health status and also required to fill out a donor screening registration form as a part of routine blood screening procedure.

Exclusion Criteria:

1. All donors who were aged younger than 18, weighed less than 45 kg, were either low hemoglobin / anemic (less than 12.5 gm %), high blood pressure (limits 140/90 or above) or unhealthy or malnourished or had any past history of HBV, HCV, HIV or VDRL were ruled out.
2. Second donation of the same donor during the study period will be excluded and the known seropositive donors for any of the seinfctions will be excluded.
3. Blood donations from contributors suspicious for any of the TTI diseases were deferred.

METHOD OF COLLECTION OF DATA :

Type of study : Cross–Sectional

Sample Size : In this study we collected data from a total of 36,184 donors out of which 35,887 were accepted and 297 were rejected.

Equipment : Semi-automatic ELISA instrument with TULIP washer and reader was used for HIV, HBsAg, and HCV tests, VDRL semi-automatic method with use of REMI rotator, and Malarial parasite detection was done by rapid card method.

Prior to blood collection, the donors were requested to answer a questionnaire to determine whether they are eligible for donation per the criteria set by "NACO". Both the new first time donors and repeated donors will be included in the study. Few milliliters of each donor's blood are dispensed in a small clean test tube be labeled with the sample number for mandatory screening of the Transfusion Transmitted Infections.

A volume of 2 ml blood was collected in plain sterile vial and 2 ml in ethylene diamine tetra acetic (EDTA) vial. All five tests i.e. HIV1 and 2, HCV, HBsAg, VDRL and Malaria were performed in our blood bank. All tests were mandatory for each and every donor or blood units. For test procedures we have separate air conditioned laboratory equipped with all the necessities like ELISA reader and washer, Incubator, variable micropipettes etc. as per guidelines of Food and Drug Administration India.

Principle of tests:

1. HIV- 4th generation HIV tests can detect P24 antigen and HIV antibodies by sandwich ELISA method.
2. Hepatitis B- A solid phase enzyme linked immunosorbent assay (ELISA), based on sandwich principle with use of micro titer plates for detection of HBsAg.
3. Hepatitis C- Detection of circulating antibodies against HCV by enzyme linked immunosorbent assay (ELISA) for detection of mixture of core NS3, NS4, NS5 antigen as capture antigen and enzyme labeled goat anti-human IgG as conjugate.
4. Syphilis- Detection by ultra-rapid test device is a qualitative membrane device based immunoassay for detection of Treponemal antibodies (IgG and IgM) in serum or plasma.
5. Malaria- Malarial antigen detection from peripheral blood using monoclonal antibodies prepared against Malaria antigen target and conjugated to either liposome containing selenium dye or gold particles in mobile phase.

Serum samples were tested for:

1. Anti HIVIgG and IgM antibodies by ELISA method using 4th generation Microlisa HIV Ag and Ab detection Kit (by J. Mitra and Co. Pvt. Ltd).
2. For HBsAg using Hepalisa Microwell ELISA by (by J. Mitra and Co. Pvt. Ltd).

3. ForAnti-HCVIgG and IgM using 3rd generation HCV Microlisa Microwell ELISA (by J. Mitra and Co.Pvt.Ltd)
4. For anti-Treponema pallidum IgG and IgM and IgA using Trepostat (RPR Screening of VDRL) (by RFL Ltd).
5. For malaria using Thermo electrom malaria card Rapid Visual Antigen test (by BIOMED Industries).

All these active serum were collected from blood bags and sample collected in vacuttee was again confirmed with other set of tests to rule out any sampling error or other technical errors that have occurred or for confirmation of test result as follows:

1. For HIV, Merilisa HIV Alisa 4th generation enzyme immunoassay (ELISA) for quantitative determination of HIV P24 antigen and antibodies to HIV1 and HIV2 in human serum.
2. For Hepatitis B, Merilisa HBsAg in-vitro enzyme immunoassay (ELISA) for quantitative determination of HBsAg in human serum using HBsAg specific antibodies.
3. For Hepatitis C, Merilisa HCV is an enzyme immunoassay (ELISA) for quantitative determination of antibodies to Hepatitis C virus in human serum.
4. For Syphilis, Reckon ultra sensitive (IgG/IgM/IgA) immunochromatographic assay for rapid card test for visual detection of Treponemal antibodies in human serum.
5. For Malaria, Malascan rapid card test and by slide method for Malaria pan/pf.

RESULTS

Study was conducted at blood bank of Pathology department at PDU Medical College and Hospital, Rajkot from 1st September 2019 to 31st August 2021. A total of 36,184 donor samples were analyzed during the said period.

Table-I : Total Donors, Accepted Donors and Rejected Donors Data

Total Donors	Accepted Donors	Rejected Donors
36,184	35,887 (99.18%)	297 (0.82%)

Rejection was done because of either low hemoglobin / anemic (less than 12.5 gm %), high blood pressure (limits 140/90 or above) or unhealthy or malnourished or had any past history of HBV, HCV, HIV or VDRL. Out of total 35,887 accepted donors, 34,362 (95.75%) were males and 1,525 (4.25%) were females. Their ages ranged between 18 to 65 years.

Table II: Age Wise Distribution of Accepted Donors

Age Group	Accepted Donors	% of Total Donors
18 to 30 years	13,278	37 %
31 to 40 years	14,714	41 %
41 to 50 years	5,383	15 %
51 to 60 years	1,435	4 %
61 to 65 years	1,077	3 %
Total	35,887	100%

From 35,887 accepted donors, highest number of donors were from age group of 31 to 40 years old (14,714), followed by age group 18 to 30 years old (13,278) and age group 41 to 50 years old (5,383). The last two groups had lowest number of donors, 51 to 60 years old (1,435) and ages 61 and older (1,077). Youngest donor's age was 18 and oldest donor's age was 65 out of the total collected samples.

Table III: Distribution of Transfusion Transmitted Infections in Positive Donors

Transfusion Transmitted Infections	Positive Donors	Percentage of Total Accepted Donors	Percentage of Total Positive Donors
HIV	42	0.12%	15.7 %
HBsAg	144	0.40%	53.7 %
HCV	10	0.03%	3.7 %
VDRL	72	0.20%	26.9 %
MP	-	-	-
Total Positive	268	0.75%	100 %

Out of total 35,887 accepted donors, a total of 268 (0.75%) were diagnosed positive for TTI infection. From the total 35,887 accepted donors, highest prevalence was found in HBsAg with 144 (0.40%) followed by VDRL 72 (0.20%) and HIV 42 (0.12%). HCV had only 10 (0.03%) positivity rate and MP had zero positive cases.

Figure I: Age Wise Distribution of Positive Donors

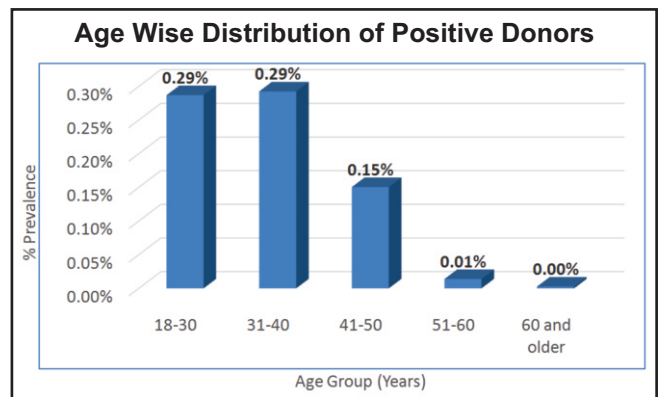


Figure II: Age Wise Distribution of HIV Prevalence

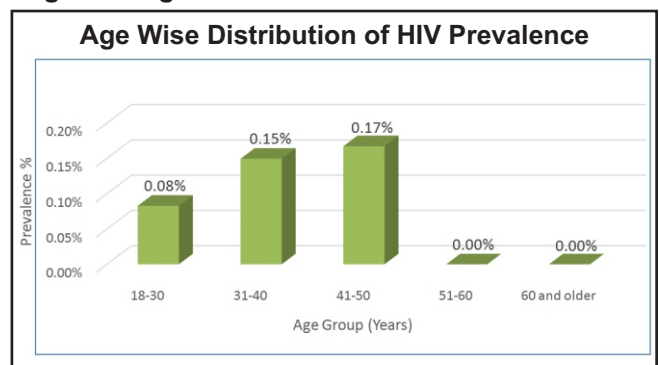


Figure III: Age Wise Distribution of HBsAg Prevalence

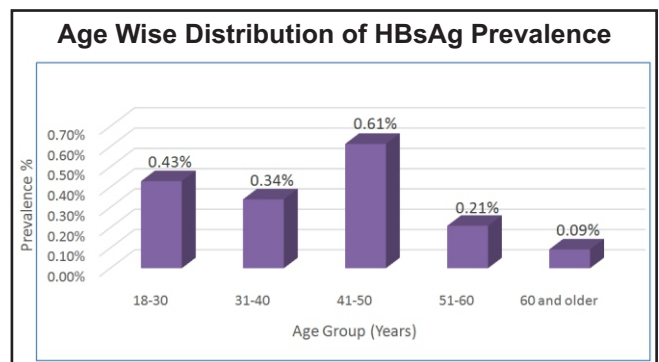


Table IV: Age Wise Distribution of HCV Prevalence

Age Group (Years)	Accepted Donors	Positive Donors	Prevalence %
18-30	13,278	3	0.02%
31-40	14,714	7	0.05%
41-50	5,383	-	-
51-60	1,435	-	-
61-65	1,077	-	-

Table V: Age Wise Distribution of VDRL Prevalence

Age Group (Years)	Accepted Donors	Positive Donors	Prevalence %
18-30	13,278	32	0.24%
31-40	14,714	26	0.18%
41-50	5,383	12	0.22%
51-60	1,435	2	0.14%
61-65	1,077	-	-

Table VI: Sex Wise Distribution of Positive Donors

Sex	Accepted Donors	Positive Donors	Prevalence %
Male	34,362	261	0.76%
Female	1,525	7	0.46%

Figure IV: Sex Wise Distribution of HIV Prevalence

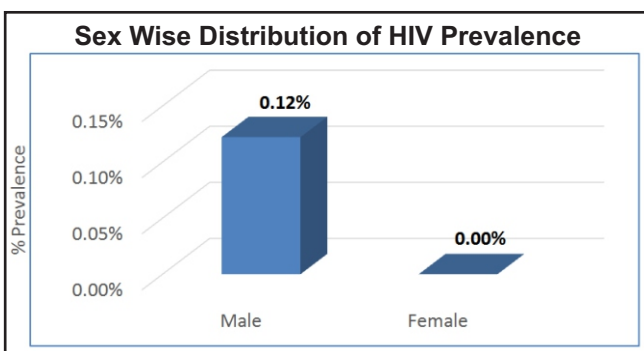
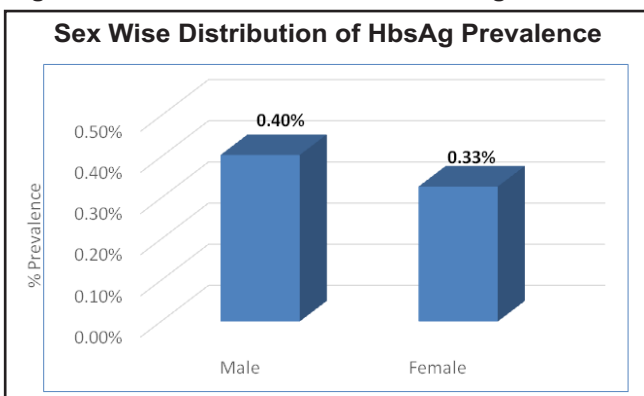


Figure V: Sex Wise Distribution of HBsAg Prevalence



DISCUSSION

Blood and blood components transfusion is a life saving measure that helps people worldwide. At the same time there still remains a potential risk for transfusion of infections to the recipient. In developing countries the prevalence for TTIs is higher and far from achieving zero risk levels.

The use of blood transfusion in clinical practice has brought untold benefits to countless individuals. But the skin of transmitting an infectious diseases is associated with every transfusion. Blood Transfusion laboratories

Figure VI: Sex Wise Distribution of HCV Prevalence

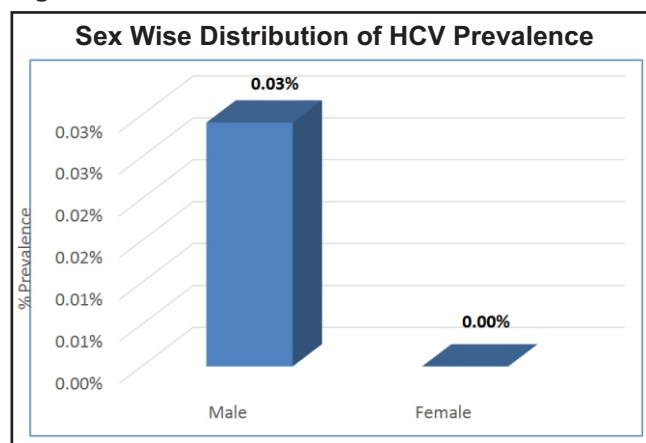
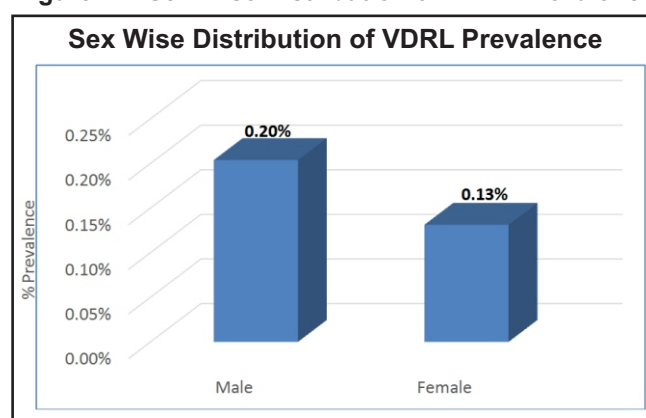


Figure VII: Sex Wise Distribution of VDRL Prevalence



reduce this risk of transfusion by appropriate tests.

The study undertook 5 different transfusion transmissible diseases testing as HIV, HBsAg, HCV, Malaria and VDRL at PDU Medical College & Hospital, Rajkot during the period of 1st September 2019 till 31st August 2021.

Out of 35,887 accepted donors, 268 (0.75%) were tested reactive for TTIs. Out of these, seropositivity of HIV 42 (0.12%), HBsAg 144 (0.40%), HCV 10 (0.03%), VDRL 72 (0.20%) and there were no Malarial Parasite cases.

The prevalence of TTD's in the present study shown is 268 (0.75%) out of 35,887 accepted donated blood units

The age of the blood donors found positive included lowest 18 and oldest 61 years. The number of cases in age group of 18 to 30 were 103 (0.29%). Cases in age group 31 to 40 years were 105 (0.29%). Followed by age groups 41 to 50 with 54 (0.15%) cases. The last two groups with minimal cases are 51 to 60 years with 5 (0.01%) and in the range of 61 to 65 years with 1 (0.01%) out of total 35,887 accepted cases.

The prevalence of TTD's in this study is 0.12%, 0.40%, 0.03%, 0.20% and 0% for HIV, HBsAg, HCV, VDRL and M respectively. The type wise distribution of

Table VII: Comparison of seropositivity of HIV with other studies

Study	HIV positivity rate in %
Our Study, Rajkot (1st Sept 2019 to 31st Aug 2021)	0.12%
National AIDS Control Organization – NACO (2017)	0.12%
John’s Medical College, Bangalore (1998)	0.44%
Guru Tej Bahadur Hospital, Delhi (2015)	0.32%
Muhimbili National Hospital, Dar Es Salaam, Tanzania (2002)	3.8%
Kathmandu, Nepal (2009)	0.12%

Table VIII: Comparison of seropositivity of HBsAg with other studies

Study	HIV positivity rate in %
Our Study, Rajkot (1st Sept 2019 to 31st Aug 2021)	0.4%
National AIDS Control Organization – NACO (2017)	0.92%
John’s Medical College, Bangalore (1998)	1.86%
Guru Tej Bahadur Hospital, Delhi (2015)	1.61%
Mongolian Ministry of Health, Ulaanbaatar, Mongolia (August 2004 to February 2005)	8.1%
Muhimbili National Hospital, Dar Es Salaam, Tanzania (2002)	8.8%
Phitsanulok Regional Blood Center, Phitsanulok Province, Thailand (1999)	4.6%

Table IX: Comparison of seropositivity of HCV with other studies

Study	HIV positivity rate in %
Our Study, Rajkot (1st Sept 2019 to 31st Aug 2021)	0.03%
National AIDS Control Organization – NACO (2017)	0.30%
John’s Medical College, Bangalore (1998)	1.02%
Guru Tej Bahadur Hospital, Delhi (2015)	0.73%
Mongolian Ministry of Health, Ulaanbaatar, Mongolia (August 2004 to February 2005)	8.7%
Muhimbili National Hospital, Dar Es Salaam, Tanzania (2002)	1.5%
Phitsanulok Regional Blood Center, Phitsanulok Province, Thailand (1999)	2.9%

Table X: Comparison of seropositivity of Malaria with other studies

Study	Malaria positivity rate in %
Our Study, Rajkot (1st Sept 2019 to 31st Aug 2021)	0%
National AIDS Control Organization – NACO (2017)	0.05%
John’s Medical College, Bangalore (1998)	0%
Guru Tej Bahadur Hospital, Delhi (2015)	0.06%
Abakaliki, Ebonyi, Nigeria (2006)	40.9%
Dhaka, Bangladesh (September 2009 to March 2010)	0%
Amhara and Tigray Regional States, Ethiopia (2007)	1%

Table XI: Comparison of seropositivity of VDRL with other studies

Study	Malaria positivity rate in %
Our Study, Rajkot (1st Sept 2019 to 31st Aug 2021)	0.20%
National AIDS Control Organization – NACO (2017)	0.21%
John's Medical College, Bangalore (1998)	1.60%
Guru Tej Bahadur Hospital, Delhi (2015)	1.62%
Kathmandu, Nepal (2009)	0.48%
Muhimbili National Hospital, Dar Es Salaam, Tanzania (2002)	4.7%
Dhaka, Bangladesh (September 2009 to March 2010)	0%

TTD's is 0.27% for first type donors and 0.47% for repeated donors out of total 35,887 accepted donors.

Based on total 268 positive donors, distribution of voluntary donors and replacement donors was 165 (61.57%) and 103 (38.43%).

Looking at the sex wise distribution, male donors were 261 (97.39%) and female donors were only 7 (2.61%) out of total 268 positive donors.

Age wise distribution of TTI's is 103 (38.43%) in ages 18 to 30 years old, 105 (39.18%) in ages 31 to 40 years old, 50 (20.15%) in ages 41 to 50 years old, 5 (1.87%) in ages 51 to 60 years old and 1 (0.37%) in ages 61 to 65 years.

Out of total 268 positive donors, occurrence of HIV was 42 (15.7%). For HBsAg it was 144 (53.7%) which is the highest number. For HCV, it was 10 (3.7%) and also the lowest. And finally for VDRL, it was 72 (26.9%). Surprisingly for Malaria, the occurrence was zero among positive donors in our study.

CONCLUSION & SUMMARY

A study in general population of donors including first time and repeated donors for a year or two may reveal the exact picture. Comprehensive, screening of donor blood for HIV, HBV, HCV, VDRL and Malaria, strict selection of donors with emphasis on getting young voluntary on-remunerated donors rather than replacement donors, reestablishment of strict guidelines for blood transfusion and use of sensitive laboratory screening tests may be possible to reduce the incidence of transfusion transmitted diseases india.

On estimating the prevalence of HIV, HBV, HCV, Malaria and VDRL for a period of 2 years from September 2019 to August 2021.

There were 35,887 accepted donors among them 95.75% were males and only 4.25% were females.

There were 13,278 donors who were in the age group of 18 to 30 years, 14,714 of them were from 31-40 years, 5,383 of them in 41-50 years, 1,435 in 51-60 years and

1,077 were in 61 years and above. The seroprevalence of HIV, HBsAg, HCV, VDRL and Malaria were 0.12%, 0.40%, 0.03%, 0.20% and 0% respectively.

The distribution of TTI's age wise was 0.29% for 18-30 years, for 31-40 years it was 0.29%, 0.15% for 41-50 years, 0.01% for 51-60 years and 0.01% (almost negligible as there was only 1 positive donor) for ages 61 years and older. The sex wise prevalence is 0.02% for females and 0.73% for males.

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A Study of Demographic Pattern and Various Associations of Diabetic Macular Edema

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KEY WORDS : Diabetes Mellitus , Diabetic Retinopathy, Diabetic macular edema

ABSTRACT

Introduction : Diabetic Retinopathy is the most common cause of newly diagnosed legal blindness amongst the working population in the world today'. Diabetic Macular Oedema is the most common cause of visual impairment in patients with Diabetes Mellitus. **Materials And Methods** : This study has been conducted in a tertiary care centre, between the period of March 2021 to May 2022. In this study 80 eyes of SO patients were included. A detailed study of history and clinical examination was performed with necessary investigations as and when required. **Discussion** : The Wisconsin Epidemiologic Study Of DR (WESDR)' showed prevalence of DME of 3% in older onset DM patients with duration of DM < 5 years to 29 % in duration of DM > 20 years, which proves increasing prevalence with increasing duration of DM. The results of The Wisconsin Epidemiologic Study of Diabetic Retinopathy XV: The long-term incidence of macular oedema' showed that older-onset patients requiring insulin have a higher incidence of macular oedema (and other diabetic complications) than non-insulin dependent diabetic patients. **Conclusion** : The conclusions of our study performed at a tertiary centre showed that DME is seen more commonly with advancing age, related to the increased incidence of DM as well as increasing duration of DM. Associated systemic hypertension increases the risk of development of DME. DME is an important cause of significant visual impairment. DME is seen more commonly in older onset DM patients requiring Insulin as compared to those who do not.

INTRODUCTION

Diabetic retinopathy is the most common cause of newly diagnosed legal blindness amongst the working population in the industrialized world today'. Although majority of diabetic patients have retinopathy of varying severity, approximately 25% of the diabetic patients have sight-threatening levels of retinopathy with legal blindness (best corrected visual acuity of 20/200 or worse).² The common causes of visual impairment in diabetic retinopathy include macular edema, macular ischemia and complications due to proliferative retinopathy³. Diabetic macular edema (DME) is the most common cause of visual impairment in patients with diabetes mellitus⁴. The majority of diabetics have type II disease, wherein macular edema is commoner.

The aims & objectives of our study are to study the incidence, presentation and diagnosis of DME in diabetic patients.

MATERIALS AND METHODS

This study was conducted in a tertiary care centre, between the period of March 2021 to May 2022. In this

study 80 eyes of 50 patients were included as per the inclusion and exclusion criteria in which we have included Type II DM patients with age more than or equal to 40 years and having any level of diabetic retinopathy. We had excluded patients below 40 years of age, patients having other associated ocular diseases causing significant visual impairment, immunocompromised, pregnant, known HIV and HbsAg positive patients. A detailed study of history and clinical examination was performed with necessary investigations as and when required.

Detailed clinical history of the patients was taken according to the proforma as mentioned below. Special attention was given to the duration of DM, details of anti diabetic drugs, and any previous ocular treatments taken as well as associated systemic illnesses like renal disease and systemic hypertension.

Clinical examination: Following points were included in the ophthalmological examination

1. Visual acuity using snellen's chart / E chart with correction.

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2. Anterior segment examination.
3. Posterior segment examination using direct ophthalmoscope, Indirect Ophthalmoscope and Slit lamp biomicroscopy using a +78D lens.

With this clinical examination, a clinical diagnosis was made and then the patients were advised

systemic workup for diabetes mellitus including FBS, PPBS and HbA1C levels. The patients were also advised to undergo renal function test as a prerequisite for FFA test. The patients were subjected to Fundus Fluorescein Angiography (FFA), to aid in the diagnosis, know the type of macular edema and the sites of leakage, to help plan the treatment as well as for monitoring the therapy.

RESULTS

On the basis of data collected according to the proforma mentioned, following observations and results were obtained –

Patients with older age were found to have higher incidence of DME especially in patients >50 years of age. Thus, the incidence of DME was found to be increasing with increasing age.

It was also found in our study that males (36) had a higher incidence of DME as compared to females (14).

It was found in our study that associated systemic hypertension (56%) and renal dysfunction (10%) increase the risk of development of DME in diabetic patients as compared to those having no systemic association (34%).

Amongst patients of DM who were on treatment, DME was seen more commonly in patients on Insulin therapy (29) than those who were not on insulin therapy (21).

Amongst patients having diabetic retinopathy, it was found that patients having Severe NPDR-PDR (58) had more occurrence of DME as compared to patients with mild-moderate NPDR (22).

It was found in our study that for the diagnosis of DME, most of the cases require clinical diagnosis (87.5%) and Fundus Fluorescein Angiography (FFA) has a minor role in diagnosing DME (12.5%).

In our study we found that a wide range of HbA1c are associated with DME, but higher HbA1c levels are associated with severity of DR.

DISCUSSION

In our study, we studied 80 eyes of 50 patients with DME, presenting to the tertiary care centre from March 2021 to May 2022. The patients were studied by means of

Table 1 : Age Wise Distribution (n=50)

Sr. No.	Age group	No. of patients	Percentage
1.	40-49 years	4	8
2.	50-59 years	23	46
3.	60 years	23	46
Total		50	100

Table 2 : Relation with Duration of Diagnosis of DM (n=50)

Sr. No.	Duration of diagnosis of DM	No. of Patients	Percentage
1	< 1 year	2	4
2	1-5 year	13	26
3	6-9 year	13	26
4	>10 years	22	44
Total		50	100

Table 3 : Range of Visual Acuity (n=80)

Visual acuity	No. of eyes with DME	Percentage
6/6 – 6/18	10	12.5
6/24 – 6/60	32	40
<6/60	38	47.5
Total	80	100

Table 4 : No. of Phakic versus Pseudophakic eyes with DME (n=80)

Pseudophakic	No. of eyes with DME
Pseudophakic	43
Phakic	37
Total	80

detailed clinical history, Ocular examination and ophthalmic and systemic investigations as required. The patients were subjected to local and systemic treatment according to the type of macular edema, severity of associated DR and Systemic DM.

Regarding the age & sex distribution, we included 50 patients amongst which 36 (72%) were males and 14(28%) were females (M: F = 2.7:1). So, a male preponderance was found. Also, 4 (8%) patients were in the age group 40 - 49 years, 23 (46%) patients in 50 - 59 years, & 23 (46%) patients in >60 years. So, the

Chart 1 – Relationship Between Clinical Exam And FFA in Diagnosis of DME (n=80)

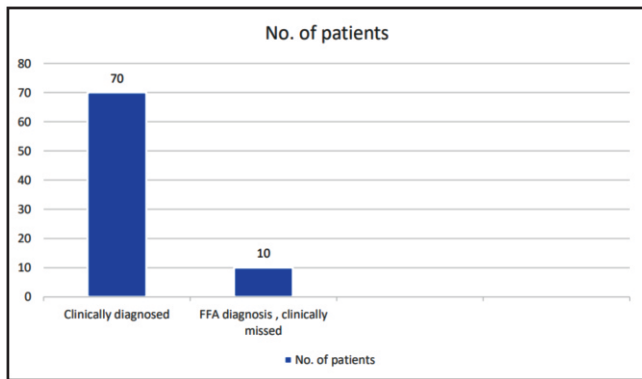
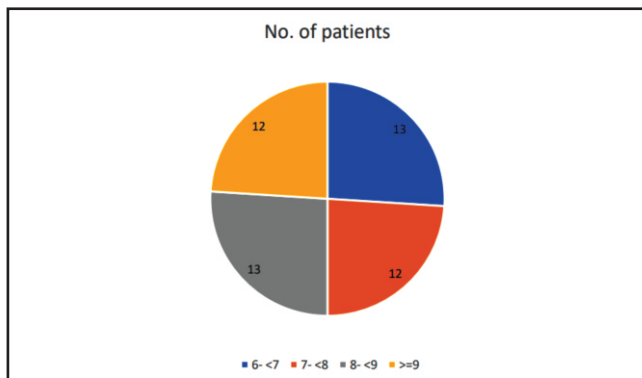


Chart 2 - Association with HbA1c Levels (n=50)



occurrence of DME was found increasing with increasing age.

Age-corrected prevalence rates suggest that there is no definite age interaction with duration of disease as shown in the study by Cugati S et al. ⁵ But because of the increasing incidence of diabetes mellitus with age, retinopathy rates are correspondingly higher with advancing age. Consequently, early detection of type 2 diabetes mellitus and institution of excellent glycemic control is paramount in decreasing the risk of vision loss from macular edema in the older population. ⁶

The duration of DM was <1 yr in 2 (4%), 1-5 yrs in 13 (26%), 6-9 yrs in 13 (26%), and >= 10 yrs in 22 (44%) patients. So higher incidence was found in patients with increasing duration of DM.

The results correlate with the Wisconsin Epidemiologic Study Of DR (WESDR) ⁷, which showed prevalence of DME of 3% in older onset DM patients with duration of DM < 5 years to 29 % in duration of DM > 20 years, which proves increasing prevalence with increasing duration of DM.

In our study, 28 (56%) patients had associated systemic HT, 5 (10%) patients had renal dysfunction and 17 (34%) patients did not have any associated systemic disease.

The UKPDS ⁹ has demonstrated that strict control of systemic hypertension has an ameliorative effect on retinopathy progression and vision loss from macular edema in type 2 diabetes mellitus. The WESDR ⁷ study also documented an adverse association of hypertension with vision loss from diabetic retinopathy. It has been suggested that not only is hypertension a risk factor for the development of macular edema, but its treatment may have important benefits in patients with uncontrolled hypertension.

In our study no. of eyes according to VA was: 10 (12.5%)- 6/6-6/18, 32 (40%) — 6/24-6/60, 38 (47.5%) - <6/60.

In the ETDRS, the 3-year risk of moderate vision loss (defined as loss of three lines of acuity on the standardized acuity chart) was ~33% at 3 years in the group with CSME. ¹¹ However, the rate of moderate vision loss for eyes with clinically significant edema without center involvement was close to 20%, and untreated eyes with DME that was less than clinically significant had a rate of ~15%. ¹²

In our study amongst the 80 eyes with DME 43 (53.75%) were pseudophakic and 37 (46.25%) were phakic which suggests DME is more common in pseudophakic eyes.

In a study performed by Patel JI, Hykin PG, Cree IA on Diabetic cataract removal: postoperative progression of maculopathy - growth factor and clinical analysis, ¹³ it was concluded that altered concentrations of angiogenic and antiangiogenic growth factors after cataract surgery may induce subclinical and clinical worsening of diabetic maculopathy.

In the study conducted by us, the associated severity of DR in eyes with DME was: 22 (27.5%) - mild/moderate NPDR, 58 (72.5%) - severe NPDR-PDR.

This correlates well with the study performed by Klein R, Klein BEK, Moss SE, under the WESDR which showed that as the severity of overall diabetic retinopathy increases, the proportion of eyes with macular edema also increases: 3% in eyes with mild nonproliferative diabetic retinopathy (NPDR), 38% with moderate to severe NPDR, and 71% with proliferative diabetic retinopathy (PDR) develop DME.

We performed HbA1c levels Of all the patients with DME and found out that HbA1c range found in no of patients

was 6 - <7 : 13, 7 - <8 : 12, 8 - <9 : 12, >=9 : 13. The range was found to be from 6 to 10.2. It was found that although a wide range of HbA1c levels are associated with DME, higher HbA1c levels are associated with the severity of diabetic retinopathy.

A similar study performed on 152 patients with either Persistent or resolved DME by Do DV, Shah SM, Sung JU, Haller JA, Nguyen QD at Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, USA showed that HbA1C values ranged from 5.3% to 15.6%. Among the 32 patients with persistent unilateral CSME, mean HbA1C was 8.6% and among the 60 patients with bilateral CSME, mean HbA1C was 9.1%.¹⁴

In this study, out of the 50 patients who were taking anti-diabetic therapy, 21(42%) were taking OHAs and 29 (58%) were taking Insulin in addition to OHAs as their anti DM treatment. So, this suggests that prevalence of DME is more common in patients of type 2 DM who require insulin as compared to those who do not.

This correlates with the results of The Wisconsin Epidemiologic Study of Diabetic Retinopathy XV: The long-term incidence of macular edema which showed The incidence of macular edema over the 10- year period was 25.4% in the older-onset group taking insulin, and 13.9% in the older-onset group not taking insulin. Older-onset patients requiring insulin have a higher incidence of macular edema (and other diabetic complications) than non-insulin dependent diabetic patients. This is likely an effect related to poorer glycemic control in patients ultimately requiring insulin therapy.

In our study, out of 80 eyes, DME was clinically diagnosed in 70 (87.5%), and clinically missed & diagnosed on FFA in 10 (12.5%) eyes. This proves that diagnosis of DME is based on clinical examination by slit lamp biomicroscopy or fundus stereoscopic photos and FFA is not indicated to diagnose the presence of DME as suggested in the ETDRS, which was also depicted in our study.

In the present study, we performed FFA of all the patients with DME and out of total 80 eyes were classified according to the pattern of leakage into: diffuse DME- 47, focal DME-23 & cystoid DME-10. The patients were subjected to the local treatment as guided by the FFA appearance & location of the leakage.

The ETDRS treatment techniques and clinical guidelines for photocoagulation of DME suggest that after diagnosis of DME is made, FFA is useful in helping guide the

treatment pattern by identifying the treatable lesions, delineating the FAZ and to know the status of macular perfusion.¹⁵

CONCLUSION

The conclusions of our study of 80 eyes of 50 patients with DME performed at a tertiary centre are as follows

1. DME is seen more commonly with advancing age, related to the increased incidence of DM as well as increasing duration of DM.
2. It was found more common in males as compared to females.
3. Associated systemic hypertension and renal dysfunction increase the risk of development of DME.
4. A significant no. of patients had a VA of < 6/60, so DME is an important cause of significant visual impairment.
5. DME is more common in pseudophakic as compared to phakic eyes.
6. Occurrence of DME correlates with the severity of DR.
7. Wide range of HbA1c are associated with DME, but higher HbA1c levels are associated with severity of DR as well as bilateral DME.
8. DME is seen more commonly in older onset DM patients requiring Insulin as compared to those who do not.
9. FFA plays a minor role in diagnosis of DME but proves a useful guiding tool in deciding the treatment strategy.

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Below age of 35 Yrs	750	5000	50	5050	50	5100
Between 36 - 45 Yrs	1250	5000	50	5050	50	5100
Between 46 - 55 Yrs	1750	5000	50	5050	50	5100

Original Articles

Role of Ultrasonography as a Primary Imaging Modality for Evaluation of Pancreatic Pathologies”

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KEY WORDS : USG as Firtst Line Modality in Pancreatic Pathologies.

ABSTRACT

Background, Aim and Objectives : Discuss the role of ultrasound in patients presenting with clinical suspicion of pancreatic pathologies and with epigastric pain, generalised abdominal pain radiating to back, vomiting, fever and in follow-up patients of pancreatic pathologies.

To evaluate the role of USG in various pancreatic pathologies and its complications.To classify pancreatic pathologies.

Methods : A retrospective observational study of 70 patients where ultrasonography was performed by using MINDRAY RESONA6 machine with curvilinear and linear probes at SVPIMSR, Hospital,ahmedabad in patients presenting with epigastric pain, generalised abdominal pain radiating to back, vomiting, fever and in follow-up patients of pancreatic pathologies

Result : Retrospective observational study of 70 patients was done with gender ratio of 2.5:1 (M:F) with male preponderance.Most common pathology encountered was acute pancreatitis (42 cases) out of which 62 % contributed for acute edematous pancreatitis and rest for acute necrotising pancreatitis. The most common causes of acute pancreatitis included alcohol and gallstones. The other pathologies were found to be chronic pancreatitis (13 cases) out of which 84 % had main pancreatic duct calculi while the rest were without calculi and pancreatic neoplasms (13 cases) out of which 76 % were solid and 24% cystic with head region being most common site of presentation. Only 2 cases of congenital anomalies were diagnosed using ultrasonography.

Conclusion : Ultrasonography is a valuable, easily available, non-invasive, affordable and rapid alternative to other modalities which not only provides precise information in localising and characterising pancreas among the patients with pancreatic diseases but is also helpful in studying various aetiology and complications of pancreatic pathologies.

INTRODUCTION

Transabdominal ultrasonography is the most used first line imaging modality in the diagnostic workup of abdominal diseases. Ultrasonography is valuable, easily available, non-invasive, affordable , without side effects and is also easy to perform on a daily basis.

As a Real-Time imaging modality, transabdominal ultrasonography gives a wide overview of the whole abdomen and then can localise the region of interest for performing detailed evaluation and determining the cause of the disease. It can also reduce the use of computed tomography, magnetic resonance pancreatography, endoscopic ultrasonography or other diagnostic methods, which are personnel-intensive and thereby costly.

Ultrasonography of the pancreas is challenging, given its retroperitoneal location with overlying structures and relatively small size. The quality and thereby the clinical usefulness of the pancreatic ultrasound imaging has rapidly advanced along with the technological progress.

With modern, high-end ultrasonography machines, experienced radiologists could achieve complete imaging of the pancreas in 90%.

Ultrasonography is sensitive in detecting necrosis, pancreatitis, peripancreatic fluid collections, calcification, neoplasm, pancreatic enlargement, atrophy and mass lesions of pancreas.

Doppler shows flows in normal surrounding vessels and abnormal vascularity, such as in tumours with high vessel

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infiltration or tumour infiltration in vessels. This method can also discriminate between cystic avascular processes without blood flow and aneurysms.

The current sensitivity and specificity of transabdominal ultrasonography in the diagnosis of pancreatic diseases, the ability to differentiate between acute and chronic inflammation and premalignant or malignant lesions is increased.

Today we have real-time, high-resolution imaging, where the spatial resolution is in line with the best image quality computed tomography (CT) or magnetic resonance imaging (MRI) can offer.

Moreover, the image quality and especially the amount of information are evolving along with the technological progression and introduction of new modalities such as CEUS and elastography.

Materials and Methodology:-

Sample size: 70

Type of study :- A Retrospective Study.

Study Duration: From Jan 2022 to Jun 2022

Age group: 15 to 75 years

No gender and age bias was followed.

Selection criteria:-

- Inclusion criteria: All patients in the age group of 15 to 75 years with clinical suspicion of pancreatic pathologies and presenting with epigastric pain, generalised abdominal pain radiating to back, vomiting, fever and in follow-up patients of pancreatic pathologies. All patients underwent ultrasonography of the abdomen.

- **Exclusion criteria :**None.

Study site :

Department of radiodiagnosis - SVP Institute of medical sciences and research Hospital; NHL MMC; Ahmedabad,Gujarat.

Scan parameters:

All the ultrasound scans were performed on MIND-RAY RESONA 6 machine in supine position equipped with low frequency (2-5 MHz) curvilinear transducer and high frequency (7.5-10 MHz) linear transducer. Informed consent of the patient was taken prior to the study. Detailed history and laboratorial investigations were reviewed before scanning.

In supine position, if bowel gas obscured the epigastric region , the patient was given water to create a window through which the pancreatic region can be scanned.

Images were sent to PACS workstation for review

Parameters studied :

- 1) Pancreas size- increased /decreased
- 2) Echotexture in pancreatitis - normal/ hypoechoic/hyperechoic
- 3) Status of main pancreatic duct with presence/ absence of calculi within it and in its side branches.
- 4) Peripancreatic collection/ fat stranding - presence/ absence. If collection present - size, site, internal echo pattern and wall of collection.
- 5) Pancreatic mass lesion - site, size, echotexture - solid /cystic.

RESULTS

Table 1 : Pancreatic Pathologies Studied:-

Usg Diagnosis Pancreatic Pathologies	Total Number	Gender	
		MALE	FEMALE
Acute edematous pancreatitis	23(32.85%)	15	8
Acute on chronic pancreatitis	3(4.28%)	3	0
Acute necrotizing pancreatitis with collection	10(14.28%)	7	3
Acute necrotizing pancreatitis with walled off necrosis	6(8.75%)	6	0
Chronic pancreatitis with MPD calculi	11(15.71%)	7	4
Chronic pancreatitis without MPD calculi	2(2.85%)	2	0
Pancreatic neoplasm	13(18.57%)	9	4
Pancreatic anomalies (Annular pancreas)	2(2.85)	1	1
TOTAL	70	50	20

Table 2 : Disease proven in various age group

Pancreatic Pathology	15-25 year	25-34 year	35-44 year	45-54 year	55-64 year	65-75 year	Total
Acute Pancreatitis	4	9	12	9	5	3	42(60%)
Chronic Pancreatitis	1	3	5	4	0	0	13(18%)
Pancreatic Neoplasm	0	0	0	2	4	7	13(18%)
Pancreatic Anomaly	0	0	0	1	1	0	2(4%)

In our study , 70 patients were taken who had common pancreatic pathologies. These patients underwent ultrasonography and were classified as described in Table 1.

There are 70 patients of which 50 are males and 20 are females showing sex ratio of 2.5:1 with male preponderance.

In our study, sex ratio in cases of acute pancreatitis is 2.8:1(31 males, 11 females), chronic pancreatitis is 2.25:1(9 males, 4 females), in neoplasm 2.25:1 (9 males, 4 females) in anomaly sex ratio 1:1(1 male, 1 female). All of the cases show male preponderance.

On classifying according to age group in Table 2, the cases of acute pancreatitis were more common in the age group of 25-55 years while the chronic pancreatitis was more common in the age group of 35-54 years.

Patients with pancreatic neoplasm were more commonly seen in the age group of 45-75 years with a significant male preponderance.

Table : 3 Acute Pancreatitis

Size	Diffuse pancreatitis	39(92%)
	Focal pancreatitis	3(8%)
Ecopattern	Hypoechoic	32(76%)
	Normal	6(14%)
	Hyperechoic	4(10%)
Main pancreatic duct	Dilated	2(5%)
	Non dilated	40(95%)
Necrosis	Presence	16(38%)
	Absence	26(62%)
Peripancreatic collection	Presence	16(38%)
	Absence	26(62%)

In our study, out of 42 cases of acute pancreatitis, 92% of the cases showed changes of diffuse edematous pancreatitis while 8% of the cases showed changes of focal pancreatitis.

Approximately 76 % cases showed hypoechoic echo pattern while very few cases had hyperechoic and normal echotexture of pancreas. Approximately 38 % of the cases showed pancreatic necrosis with peripancreatic collection.

Approximately only 5 % of the cases of acute pancreatitis had dilated main pancreatic duct while 95% of them the main pancreatic duct was not visualised .

Table : 4 Chronic pancreatitis

Size	Normal	2(15%)
	Atrophic	11(85%)
Ecopattern	Normal	3(23%)
	Hyperechoic	10(77%)
Main pancreatic duct	Dilated	12(92%)
	Non dilated	1(8%)
Main Pancreatic Duct Calculi	Presence	11(84%)
	Absence	2(16%)
Parenchymal Calcification	Presence	13(100%)
	Absence	0

In our study, out of 13 cases of chronic pancreatitis, 15 % of the cases showed normal size of pancreas while 85% of the cases showed atrophic pancreas. Out of which approximately 77% cases showed hyperechoic pancreas , 23 % showed normal pancreas. Approximately 92% of the cases of chronic pancreatitis had dilated main pancreatic duct while 8 % of cases showed non dilated main pancreatic duct. Among which approximately 84% of them showed calculi within it while 16 % of the cases did not show calculi within it. All cases showed parenchymal calcification.

Table : 5 Pancreatic Neoplasm

Site	Head	6(46%)
	Body	4(30%)
	Tail	3(24%)
Characteristics of lesion	Solid	10(76%)
	Cystic	3(24%)
Metastasis	Presence	4(30%)
	Absence	9(70%)
Lymph node involvement	Presence	5(38%)
	Absence	8(62%)

In our study , out of 13 cases of neoplasm, 46% were present in the head of the pancreas, while 30% in the body region and 24% in the tail region. Out of which, 76% are solid and 24% are cystic lesions. Approximately 38% of neoplasm showed lymph node involvement while 30% showed hepatic metastasis.

Table : 6 Presenting Complaints

Complaints	Number	Percentage
Epigastric pain	53	75.71%
Vomiting	37	52.85%
Fever	48	68.57%
Decrease appetite / Weight loss	27	38.57%

Table : 7 Complications

Complaints	No. of Patients
Pseudocyst	6 (8.5%)
Pleural effusion	30(42%)
Ascites	18(25%)
Vein thrombosis	5(7%)

DISCUSSION

Pancreatic pathologies are one of the causes of acute abdominal pain in patients admitting to the emergency department. Ultrasonography is the first imaging modality that is used for assessment of pancreatic pathologies, its complications and classification.

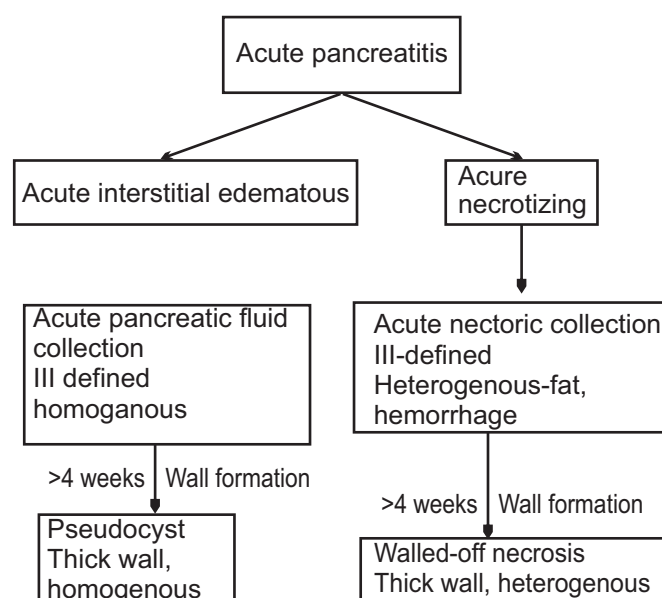
Acute pancreatitis:-

In our study the most common pathology found was acute pancreatitis (60%.) The two most common causes of acute pancreatitis are alcohol and gallstone disease, Other uncommon causes are abdominal trauma, drugs, iatrogenic, hypercalcemia, hyperlipidemia and infection.

On ultrasonography, acute interstitial pancreatitis appears hypoechoic and bulky with hyperechoic rim of inflammation or fluid around pancreas. There may be associated fluid collections in peripancreatic regions.

For acute necrotizing pancreatitis ultrasonography is useful for evaluating extent of necrosis and collection.

In our study 76 % cases showed hypoechoic echo pattern and 38 % of the cases showed pancreatic necrosis with peripancreatic collection.



Chronic pancreatitis :-

Chronic pancreatitis is progressive fibroinflammatory disease resulting in irreversible structural changes in pancreas with progressive loss of the lobular morphology, deformation of large duct and changes in the arrangement and compositions of islets.

The most common causes of chronic pancreatitis are alcohol intake, malnutrition, cystic fibrosis, mutation of trypsinogen gene, pancreatic or periampullary neoplasm.

In ultrasonography, in the early stage of chronic pancreatitis, pancreas appears heterogeneous due to focal areas of intervening hypoechogenicity, which are areas of focal inflammation. In advance stage changes of chronic pancreatitis are easily appreciated in the form of dilated main pancreatic duct with pancreatic and intraductal calculi and associated atrophy of pancreas with parenchymal calcification.

Ultrasonography is useful for detection of complications like pseudocysts, venous thrombosis or arterial pseudoaneurysms. In our study 85% of the cases showed atrophic pancreas, 77% cases showed hyperechoic pancreas, 92% of the cases of chronic pancreatitis had dilated main pancreatic duct. 84% of them showed calculi within it and all cases showed parenchymal calcification.

The most common complication with which the patient presented was pleural effusion and followed by ascites, pseudocyst and splenic vein thrombosis.

Pancreatic neoplasms:-

Pancreatic neoplasms on the basis of their functions are classified into exocrine, endocrine, mesenchymal (arise from the structural elements of the pancreas like nerves, fat, lymph) and metastasis. Exocrine pancreatic neoplasms contribute to approximately 99% of all pancreatic neoplasms. Exocrine neoplasms include pancreatic adenocarcinoma, cystic neoplasms and intraductal papillary neoplasms.

From recent studies, there is evidence that endocrine pancreatic neoplasms originate from pluripotent stem cells in ductal epithelium. They are further divided into functional (~85%) and non-functional (~15%).

Functional endocrine pancreatic neoplasms include insulinoma (most common, 10% are malignant), gastrinoma (second most common, 60% malignant), glucagonoma (80% malignant), VIPoma and somatostatinoma. These endocrine tumours of the pancreas are highly vascular, well-circumscribed and can demonstrate calcific or cystic change. Sonographically, the lesion appears well defined as a rounded/oval hypoechoic solid lesion with smooth margins and internal vascularity. Hyperechoic and targetoid liver metastasis can be seen.

Pancreatic ductal adenocarcinoma contributes to the majority (~90%) of all pancreatic neoplasm and has very poor prognosis with high morbidity. Risk factors include cigarette smoking, a diet rich in animal fats and protein, chronic pancreatitis, family history and association with hereditary syndromes. Serum markers CA 19-9 and CEA are elevated. Sonographically, the lesion appears hypoechoic solid mass with internal vascularity and with double duct sign. Head and uncinate process are the most common locations seen in almost two third cases.

Cystic lesions of pancreas include serous cystadenoma, mucinous cystadenoma and intraductal papillary mucinous neoplasms.

Serous cystadenoma has strong female predilection (4:1) and usually presents in middle age to elderly patients. Most patients are asymptomatic but some may present with pain, weight loss, jaundice or a palpable mass. They are distributed throughout the pancreas in the head/uncinate process 40% (most common sites), body 34%, and tail 26%.

Sonographically, the lesion appears as a uniloculated hypoechoic cystic lesion with internal thin septations. No evidence of internal calcification or solid components. The suspicion for malignant transformation to be considered when there is presence of heterogeneous solid cystic lesion with papillary projections, thick septations, internal solid components with vascularity and ascites.

Mucinous cystadenoma has strong female predilection with exclusive presentation in middle age patients. Approximately 80% occur in the body or tail of the pancreas, and less commonly in the head of the pancreas. Sonographically, the lesion appears as a multiloculated hypoechoic cystic lesion with internal septations and echoes. No evidence of internal calcification or solid components. The suspicion for malignant transformation to be considered when there is presence of heterogeneous solid cystic lesion with papillary projections, thick septations, internal solid components with vascularity and ascites.

Intraductal papillary mucinous neoplasms (IPMN) are epithelial pancreatic cystic tumours of mucin-producing cells that arise from the pancreatic ducts most commonly seen in elderly patients (> 60 years). The lesions can arise from main duct, branched ducts or can be of mixed type.

On Ultrasound, they appear as small thin-walled pancreatic cysts or dilated hypoechoic ducts (main pancreatic duct >5 mm). Mural nodules and mucin globules may appear hyperechoic. Sometimes, diffuse main duct type lesions have appearances similar to chronic pancreatitis making it difficult to diagnose it sonographically. Solid components, as well as bile duct dilatation are suspicious for malignant transformation.

Solid pseudopapillary tumours of the pancreas are rare and usually benign pancreatic neoplasms that are most commonly seen in young females. Most common site of lesion is from the tail of pancreas and tumours frequently contain varying amounts of necrosis, haemorrhage, and cystic change. The lesions can be large at time of diagnosis, even up to 8 cm in size.

On ultrasonography, the lesion appears as a large well-defined solid cystic mass with heterogeneous echo pattern.

Pancreatic metastases are rare and are only found in only 3 to 12% of patients accounting only 2-5% of all pancreatic malignancies. The most common primaries encountered are renal cell carcinoma, lung cancer, breast cancer, HCC, GI malignancies, prostate cancer, etc. On ultrasonography, the lesion can present as localised mass (most common 50-75%), diffuse pancreatic involvement or multiple nodules. They appear solid, hypoechoic lesions with pancreatic parenchyma with internal vascularity up to 2 cm. In our study, out of 13 cases of neoplasm, the most common location was the head of the pancreas contributing to 46%. Out of which, 76%

are solid and 24% are cystic lesions. Approximately 38% of neoplasm showed lymph node involvement while 30% showed hepatic metastasis.

Pancreatic anomalies:-

Anomalies of the pancreas are classified as :- a fusion anomaly (pancreas divisum), migration anomaly (annular pancreas, ectopic pancreas), duplication anomaly (number or form variation) or aplasia/ hypoplasia of pancreas.

Pancreatic fusion or migration anomalies may result in anatomic variants that predispose to specific pancreatic or peripancreatic diseases.

Pancreas divisum results from a failure of ventral and dorsal bud fusion. The ventral duct drains only the ventral pancreatic anlage, whereas the majority of the gland empties into the minor papilla through the dorsal (Santorini) duct. It is the most common congenital anomaly and in most cases, there is no communication between the ventral and dorsal duct; however, in some cases, there is a communication remaining and in others the ventral duct is totally absent. Pancreas divisum is associated with acute and recurrent pancreatitis.

Annular pancreas is a rare congenital anomaly in which incomplete rotation of the ventral anlage leads to a segment of the pancreas encircling the second part of duodenum. There are two types of annular pancreas: extramural and intramural. In the extramural type, the ventral pancreatic duct encircles the duodenum to join the main pancreatic duct. In the intramural type, the pancreatic tissue is intermingled with muscle fibres in the duodenal wall, and small ducts drain directly into the duodenum.

IMAGES:-



Necrotising pancreatitis with walled off necrosis



Chronic calcifying pancreatitis



Pancreatic tail mass with hepatic metastasis



Pancreatic pseudocyst



Pancreatic head mass



Uncinatus process mass with dilated main pancreatic duct



Main pancreatic duct calculus



Acute interstitial edematous pancreatitis

CONCLUSION

High end ultrasonography machines are the first line modality of choice for abdominal and pancreatic imaging as they have highly improved image quality and diagnostic accuracy.

Ultrasonography is a valuable, easily available, non-invasive, affordable and rapid alternative to other modalities which not only provides precise information in localising and characterising pancreas among the patients with pancreatic diseases but is also helpful in studying various aetiology and complications of pancreatic pathologies.

Also if needed, it can be repeated on a daily basis because of its ability to detect small morphological changes. Under good scanning conditions, ultrasonography has higher spatial resolution than CT or MRI.

Also, CE-USG with its ability to show macro- and micro vascularity is also used as a second line modality to clarify small lesions. Elastography use is emerging in evaluation of pancreatic diseases.

Acknowledgements

Not applicable.

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Original Articles

Response to Treatment and Short-term Outcome of Pediatric Patients with Guillain Barre Syndrome

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KEY WORDS : Acute Inflammatory demyelinating polyneuropathy, Disability, Follow-up, prognosis.

ABSTRACT

Background : Guillain-Barre syndrome(GBS) is an autoimmune disorder that is thought to be a postinfectious polyneuropathy, involving mainly motor but also sensory and sometimes autonomic nerves. This syndrome affects people of all ages and is not hereditary. The onset of weakness usually follows a non specific gastrointestinal or respiratory infection by approximately 10 days. Variants of GBS include: Acute inflammatory demyelinating polyradiculoneuropathy (AIDP), Acute motor axonal neuropathy (AMAN), Acute sensory and motor axonal neuropathy (ASMAN), Miller Fisher Syndrome, Acute Pandysautonomia , Chronic GBS, Congenital GBS, Bickerstaffs brainstem encephalitis (BBE). Patients with milder weakness and slow progression may be treated by observation for remission. Severe or rapidly progressive weakness is treated with intravenous immunoglobulin. Plasmapheresis and /or immunosuppressive drugs are alternative. Demyelinating forms of GBS generally recover more quickly than axonal.

Objective: To evaluate the response to treatment and to evaluate short term outcome in patients with GBS.

Methods: This is a Prospective Observational Study. Children aged less than 12 years with a final diagnosis of GBS at our hospital from August 2017 to December, July 2021 were included in study. All details were recorded in proforma and analyzed. Disabilities were assessed at discharge and 60 days follow-up using Hughes scale (0-5).

Results : A total of 183 patients were diagnosed as GBS in this study period. Number of patients with AIDP was 31.2%(n=45) and Axonal variety was 56% (n=80). In the axonal variety, there were 77 cases of acute motor axonal neuropathy (AMAN) and 3 cases of acute motor sensory axonal neuropathy (AMSAN). Males were 99(54.1%) and Females were 84(45.9%). Patients in age group of 1-5 year were 67(36.6%), in age group of 6-9 years were 81(44.3%) and in age group of 10-12 years were 35(19.1%). Intravenous immunoglobulin therapy was given to 121(66.1%) patients and plasmapheresis was done in 54(29.5%). Out of 183 patients, 132 were discharged but only 86(65.4%) patients were available for follow up at 60 days. Total number of patients fully recovered (scale 0,1) were 69.8%(60/86) at 60 days follow up. 73.6% (14/19) patients of AIDP showed full recovery, out of which 5 were in age group of 1-5 years and 9 patients were in age group of 6-12 years. 66.6% (34/51) patients of axonal variety showed full recovery at 60 days follow up, out of which 12 were in age group of 1-5 years and 22 were in age group of 6-12. 75%(12/16) patients of unspecified variant showed full recovery, out of which 4 patients were age group of 1-5 years and 8 were in age group of 6-12 years. Out of total 60 fully recovered patients number of the patients recovered after giving IVIG were 43(71.7%) and after plasmapheresis were 17(28.3%).

Conclusion : Irrespective of the severity, disability at 60 days follow up is less with the demyelinating variety as compared with the axonal subtype of GBS.

INTRODUCTION

Guillain-Barré syndrome (GBS) is presently the most common cause of acute flaccid paralysis in India. Among children in India and neighboring areas, the axonal variety predominates^[2-6]; the demyelinating variety

predominates in South America^[8], other parts of Asia^[9-11] and Europe^[12-13].

METHODS

This is a Prospective Observational Study conducted in a pediatric tertiary care hospital August 2017 to July ,2021

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over a period of 4 years. During this period, 228 children with acute flaccid paralysis (AFP) were admitted, among whom, 183 were diagnosed as GBS (Asbury and Cornblath criteria ^[14]. and included in our study after excluding other causes like hypokalemic periodic paralysis (n=4), transverse myelitis (n=5), traumatic neuritis (n=4), postdiphtheric polyneuritis (n=20) and those who did not give consent(n=12). Informed consent was taken before enrolment. In the study Intravenous immunoglobulin therapy was given to 126 (68.8%) patients and plasmapheresis was done in 57(31.2%) patients. Nerve conduction study was done in 143 patients, after initialstabilization. All the patients underwent stool examination for poliovirus detection. Lumbar puncture was done in 156 (85.2%) patients in the second week after disease onset. The initial response

and outcome of GBS was assessed based upon the modified disability grading scale of Hughes ^[15] and colleagues at time of admission, at time of discharge and in follow-up after 60 days.

Hughes Modified Disability Grading Scale

Grade	Neuronal Disability
0	Healthy
I	Minor signs or symptoms
II	Able to walk 5 meters without walker or support
III	Able to walk 5 meters with walker or support
IV	Bed or chair bound (unable to walk 5 meters with walker or support)
V	Required assisted ventilation (for at least part of a day)

Study Flowchart

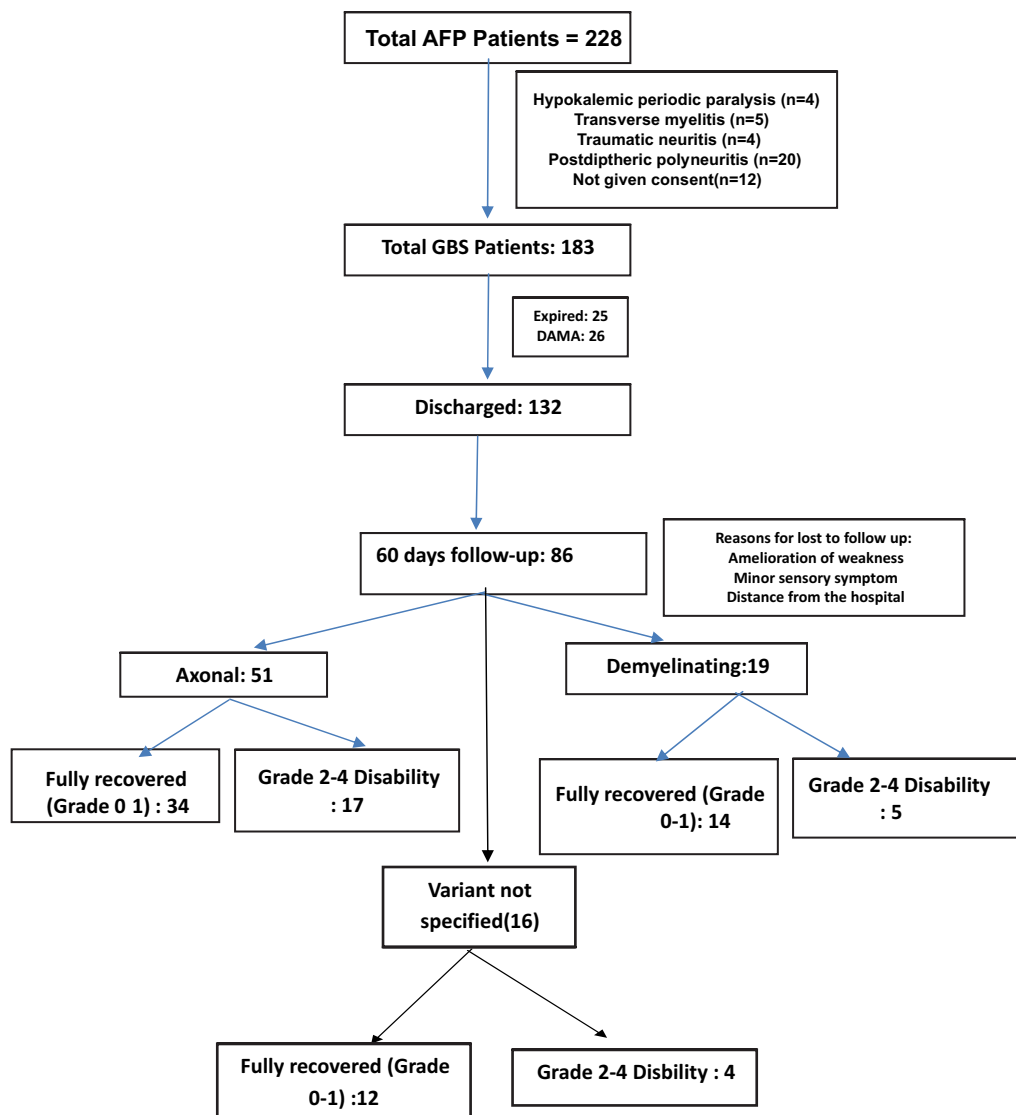


Table 1 : Disability Scaling at Time of Discharge

Disability scale	Grade 0	1	2	3	4
At discharge (n=132)	62	28	27	11	4
Axonal(n=76)	29(46.8%)	16(57.1%)	21(77.7%)	7(63.6%)	3(75%)
Demyelinating (n=35)	22(35.4%)	9(32.1%)	2(7.4%)	1(9.1%)	1(25%)
Variant not specified (n=21)	11(17.7%)	3(10.7%)	4(14.8%)	3(27.2%)	0

Table 2 : : Disability Scaling On 60 Days Follow Up

Disability scale	Grade 0	1	2	3	4
At 60 days follow up (n=86)	41	19	17	7	2
Axonal(n=51)	24(58.5%)	10(52.6%)	11(64.7%)	5(71.4%)	1(50%)
Demyelinating (n=19)	9(21.9%)	5(26.3%)	4(23.5%)	1(14.2%)	0
Variant not specified (n=16)	8(19.5%)	4(21.1%)	2(11.7%)	1(14.2%)	1(50%)

RESULTS

Out of total 183 of GBS cases, males were 99(54.1%) and females were 84(45.9%) ; patients in age the group of 1-5 year were 67(36.6%) , in age group of 6-9 years were 81(44.3%) and in age group of 10-12 years were 35(19.1%) with median age of 5.6 years. Preceding respiratory and gastrointestinal infections were found in 27.3% (n=49) and 19.4% (n=35) children, respectively. History of antecedent illness was present in 122 (66.7%) patients including diphtheria-tetanus-whole cell pertussis vaccination in one patient.

At presentation, there was quadriplegia in 44.3% and paraparesis in 33.8% of children. Ascending paralysis was the most common mode of presentation in 156 (87.7%) children. Maximum number of children (89.3%) reached peak disability within one week of onset of symptoms. Areflexia was found in 94.4% children, and 32.6% showed bulbar palsy. Dysautonomia presenting as excessive sweating (n=27), hypertension (n=31), sinus tachycardia (n=52), sinus bradycardia (n=28), sinus arrhythmia (n=30) were seen in 49.6% (n=92) of the patients. Demyelinating pattern(AIDP) was seen in 31.2%(n=45) ; axonal pattern in 56% (n=80); whereas, 12.6%(n=18) had normal NCV pattern. In the axonal variety, there were 77 cases of acute motor axonal neuropathy (AMAN) and 3 cases of acute motor sensory axonal neuropathy (AMSAN). Albuminocytological dissociation in CSF was found in 77 (54.3%) patients.

Pediatric intensive care unit (PICU) care for the management of dysautonomia and respiratory paralysis was required in 94(41.6%) patients. Mechanical ventilation for respiratory failure was required in 43 (23.2%) patients, out of which 25 (13.6%) died during the acute phase of the illness. 11(6.1%) patients developed aspiration pneumonia and 16 (8.7%) patients developed VAP. 23 patients (12.9%) required tracheostomy. Out of 183 patients, 132 were discharged but only 86 (65.4%) patients were available for follow up at 60 days after the onset of illness. The reasons for not following up were amelioration of weakness, minor sensory symptom, distance from the hospital and follow up at their nearby clinics. Complete recovery was there in 60 (69.7%) and 26(30.3%) patients were having residual weakness at 60 days follow-up. 73.6% (14/19) patients of AIDP showed full recovery, out of which 5 were in age group of 1-5 years and 9 patients were in age group of 6-12 years. 66.6% (34/51) patients of axonal variety showed full recovery at 60 days follow up, out of which 12 were in age group of 1-5 years and 22 were in age group of 6-12. 75%(12/16) patients of unspecified variant showed full recovery, out of which 4 patients were age group of 1-5 years and 8 were in age group of 6-12 years. Out of total 60 fully recovered patients number of the patients recovered after giving IVIG were 43(71.7%) and after giving plasmapheresis were 17(28.3%).

DISCUSSION

This is a single center study done which included 183 children with GBS and compared their outcome at discharge and 60 days follow up. Of the 143 patients available for electrophysiological studies 31.2% had the demyelinating subtype and 56% had axonal variety.

In the present study, those having the axonal variety, had higher Hughes disability score at presentation, at the peak of disease, on discharge and on follow up at 60 days respectively. Axonal variety had higher incidence of antecedent GI symptoms in our study as well as other studies, while antecedent upper respiratory illness is more common in the demyelinating variety as also noted in few previous studies. The reasons why some infections are more common in certain subtypes of GBS are not very clear. Among those patients in which EMG NCV was possible, more mortality was seen with the AMAN variety in the present study. We had a higher number of axonal variety in follow up as compared to the demyelinating subtype. This was probably due to persistence of weakness in axonal type which also explains the poorer outcome. Out of 183 patients, 132 were discharged but only 86(65.4%) patients were available for follow up at 60 days. Total number of patients fully recovered (scale 0,1) were 69.8%(60/86) at 60 days follow up. Out of 86 patients who come on 60 days follow up 73.6% (14/19) patients of AIDP showed full recovery, 66.6% (34/51) patients of axonal variety showed full recovery at 60 days follow up and 75%(12/16) patients of unspecified variant showed full recovery. Out of total 60 fully recovered patients number of the patients recovered after giving IVIG were 43(71.7%) and after giving plasmapheresis were 17(28.3%).

CONCLUSION

Males were more affected than females. Maximum number of patients were in age group of 6-9 years. Axonal variety was more common than Demyelinating variety. Demyelinating forms of GBS were found to recover more quickly than axonal. There were higher number of axonal variety in follow up as compared to the demyelinating subtype. This was probably due to persistence of weakness in axonal type which also explains the poorer outcome. Irrespective of the severity, disability is less with the demyelinating variety as compared with the axonal subtype.

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Original Articles

An evaluation of objective visual outcomes and subjective visual experience after bilateral implantation of toric intraocular lenses.

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KEY WORDS : PRE OP: Pre-Operative, POST OP: Post-Operative, IOL: Intraocular lens

ABSTRACT

To compare objective visual outcomes and subjective visual experience after bilateral implantation of toric intraocular lenses. A prospective observational study was performed on 216 eyes of 108 patients treated between 2016 to 2020 for Cataract with astigmatism (cylinder ≤ -4.00 Diopters). The 216 consecutive eyes that had undergone for bilateral cataract surgery with phaco and implantation of Toric Intraocular lens. Refractive predictability, change in mean spherical equivalent refraction, postoperative uncorrected visual acuity (UCVA), and subjective visual outcome were compared at, 1 month following surgery. Pre operatively 216 eyes of 108 patients had visual acuity between 1mFC to 6/18. After implanted toric IOL 166 patients have 6/6 visual acuity and 49 patients have 6/9 visual acuity and 1 patients have 6/12 visual acuity. The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative astigmatism of Subjective test reading and post-operative astigmatism of Subjective test reading in patients with astigmatism between 1D-4D. In subjective questioner patient show rating between 7 to 10 out of 10, this shows satisfaction for distance & near vision after implantation of toric intraocular lens. Overall patients were satisfied with visual performance because of less amount of refractive power.

INTRODUCTION

Cataract, or clouding of the crystalline lens in the eye, is presently the foremost form of visual impairment in the biosphere and surgery to remove cataracts is now the utmost communal surgical procedure in the developed world, undertaken by ophthalmologists.¹ The demand for cataract extraction and intraocular lens (IOL) implantation has grown due to enhancements in the healthcare establishment, which has increased life expectancy (Foster, 2000). In addition, visual expectation and task demands are increasing within the older population, particularly with the demands of mobile communication. Since the initiation of intraocular lenses (IOLs) in the 1950's, designs have advanced to not only optimize the spherical power of the eye for distance vision, but also aim to achieve spectacle independence through correction of astigmatism and by increasing the range of clear focus in the presbyopic eye.^{2,3}

MATERIAL & METHODOLOGY

It was a Participatory, Multidisciplinary, observational study conducted at Keshvi eye hospital; Surat with purposive sample of 216 eyes of 108 patients who fulfills the inclusion criteria to evaluate the objective visual outcomes and subjective visual experiences after

bilateral implantation of toric intraocular lenses. Study also assesses the predictability and stability of bilateral toric intraocular lens (IOL) implantation in cases of cataract with preexisting astigmatism. In present study Preoperative Assessment includes Patient's Demographic data, detailed history, complete structured 10-item questionnaire, General examination of ocular adnexa, intraocular pressure, visual Acuity, K reading and IOL power calculated with IOLMaster & Ascan. For each eye, the relevant preoperative assessment parameters, including flat and steep K values and the axis of each, was enter into an online toric IOL calculator to determine the axis placement of the IOL and the appropriate IOL model.

For Surgical Preoperatively, initial markings are made with the patient sitting up to avoid cyclorotation. The eye is marked at 0 degree and 180 degree while using a slitlamp, which is equipped with an angle- measuring reticule eyepiece. During surgery, these reference marks is use to determine the desired axis of IOL orientation, which then was marked using Meridian (Axis) marker. Marking was performed with dye or ink; Surgeons are operating superiorly or will place the incision on the steepest axis of astigmatism. The IOL was placed in the capsular bag using the Delivery System. No limbal relaxing incisions or any other surgical procedures was

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allowed. Surgery on the second eye followed 7 to 30 days after surgery on the first eye.

Postoperative examinations were performed 1 day after implantation of each IOL. All subsequent postoperative examinations were designated 1 month after the date of the IOL implantation. At every postoperative examination, toric IOL orientation was determined by examining the eye at the slitlamp and noting the IOL axis, designated by 6 laser marks on the optic of the IOL. Manifest refraction and monocular uncorrected distance visual acuity (UDVA) and corrected distance visual acuity (CDVA) was examining at 1st month. The subjective questionnaires were again distributed at 1 month.

RESULTS

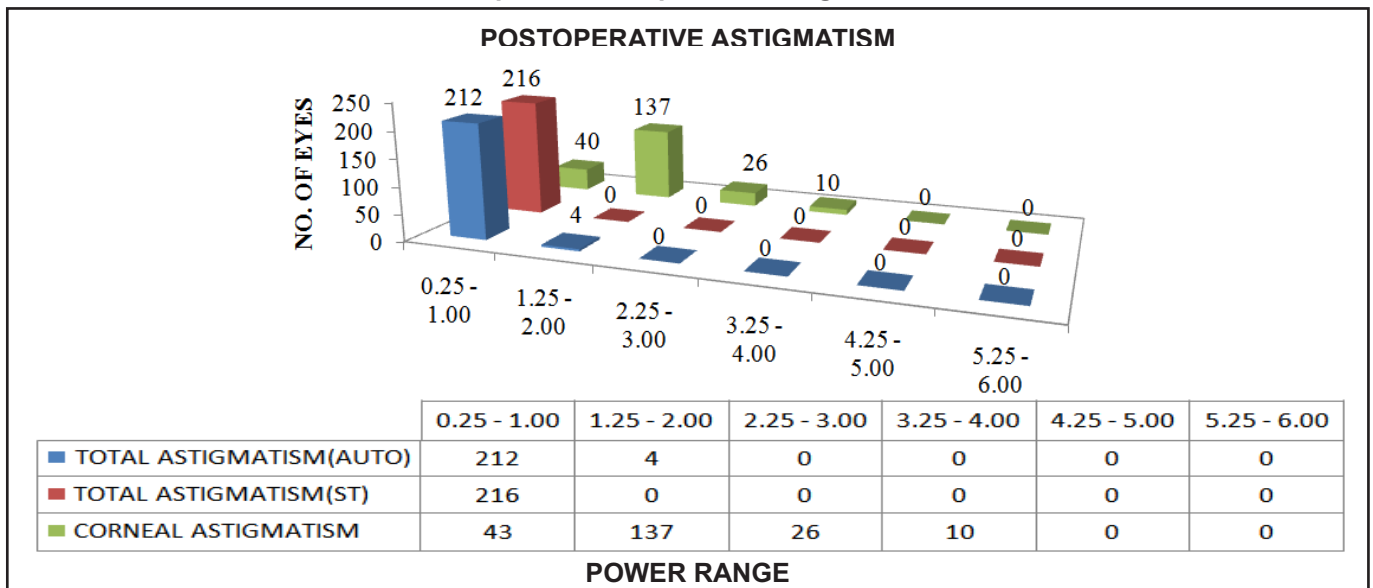
108 patients with both eyes astigmatism and Cataract were agreed for cataract surgery with toric IOL. The population included was 60 males and 48 females subjects ranged from 18 to 85 years of age.

Pre operatively 216 eyes of 108 patients had visual acuity between 1mFC to 6/18. After implanted toric IOL 166 patients have 6/6 visual acuity and 49 patients had 6/9 visual acuity and 1 patients have 6/12 visual acuity. There was no significant difference between pre and post K-reading. But post-operative visual acuity was better and there was no residual astigmatism because it was corrected by implantation of toric IOL.

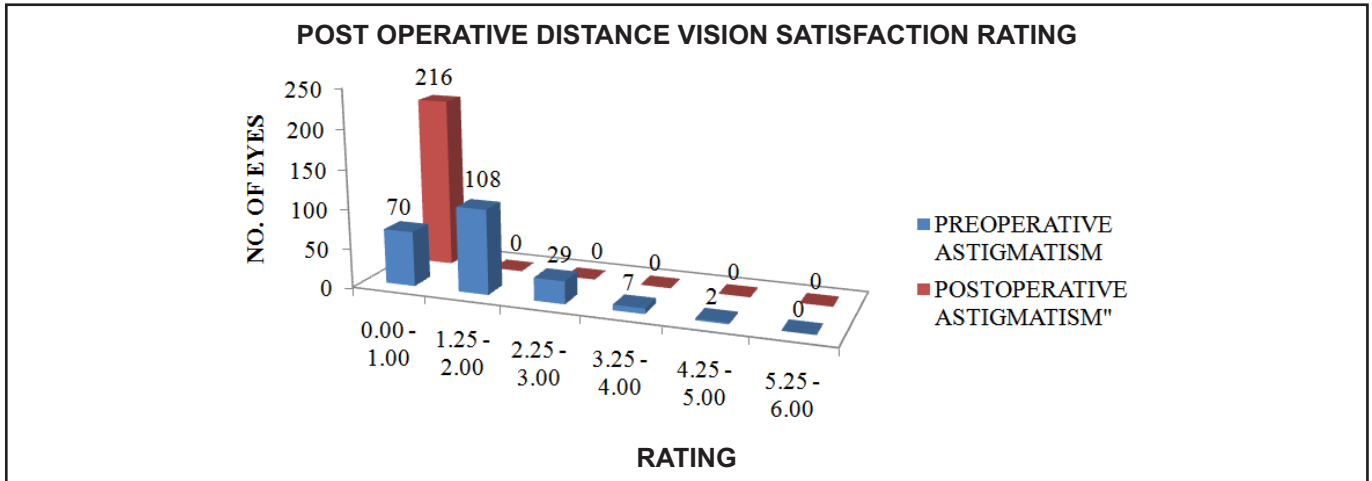
Table : I - Pre and post operative refractive error

Demographic and Preoperative parameters in astigmatic eyes that underwent cataract surgery with Toric intraocular lens implantation	
Parameter	Toric IOL (n= 108 patients, 216 eyes)
Male / Female (%)	44/56
Age (Y)	59.39
Sphere (D)	-0.3495
Cylinder (D)	-1.09954
Mean Spherical Equivalent Refraction (D)	-0.89931
postoperative parameters in astigmatic eyes that underwent cataract surgery with Toric intraocular lens implantation	
Parameter	Toric IOL (n= 108 patients, 216 eyes)
Sphere (D)	-0.03
Cylinder (D)	-0.02
Mean Spherical Equivalent Refraction (D)	-0.04

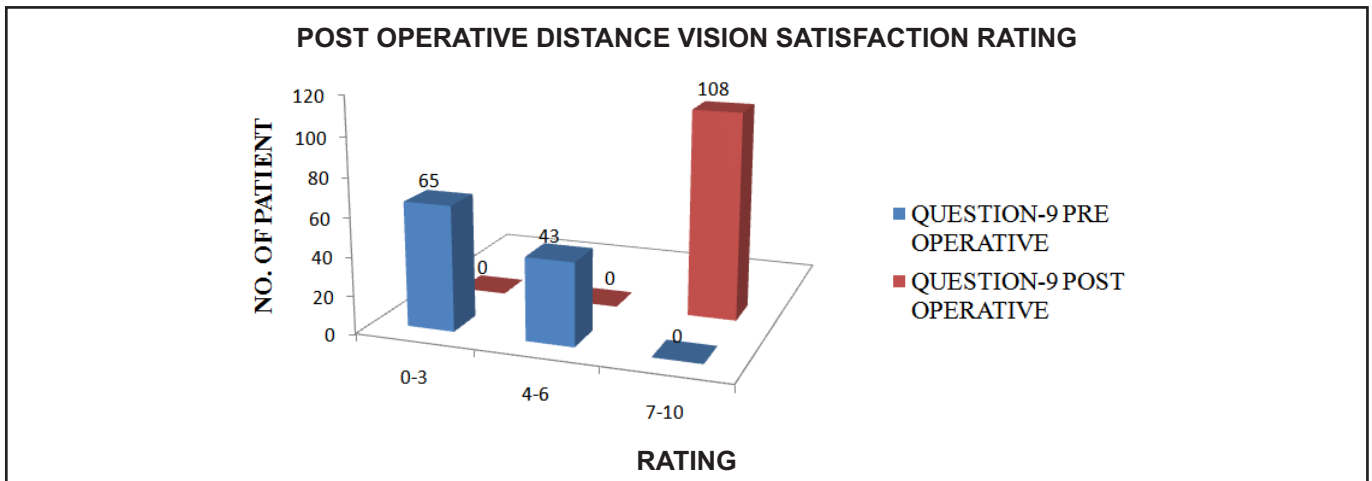
Graph: I - Post-operative Astigmatism



Graph: II - Pre VS Post-operative Astigmatism (Subjective Test)



Graph: III - Post-operative Distance vision Satisfaction Rating



The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative spherical equivalent reading and post-operative spherical equivalent. reading in patients with cataract.

The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative astigmatism of Subjective test reading and post-operative astigmatism of Subjective test reading in patients with astigmatism between 1D-4D.

The results indicate that phacoemulsification and posterior chamber toric IOL implantation is an effective option to correct pre-existing astigmatism in cataract surgery. In subjective questioner patient show rating between 7 to 10 out of 10, this shows satisfaction for distance & near vision after implantation of toric intraocular lens.

CONCLUSION

Present study summaries that the implantations of binocular toric IOL in astigmatic patients were effective option to correct pre-existing astigmatism in cataract

surgery with implantation of toric IOL.

There was no significant difference between pre and post K-reading. But post-operative visual acuity is better and there is no residual astigmatism because it was corrected by implantation of toric IOL. Overall patients were satisfied with visual performance because of less amount of refractive power. Patient also grade high satisfaction visual rating in post-operative subjective visual experience.

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Original Articles

Study of Role of Pre-Op CT Scan & Treatment Modalities for Cold Abscess Over Chest Wall

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KEY WORDS : Cold Abscess, Chest Wall Abscess, Tubercular Abscess

ABSTRACT

Tuberculosis remains a problem of public health, in spite of numerous significant advances noted in the diagnosis in recent years. The involvement of the thoracic wall is a rare extra-pulmonary involvement. The diagnosis is improved by the use of non-invasive tools such as the CT scan of thorax and Xpert MTB/Rif® test. Medical care is based on medical treatment and sometimes associated with surgical treatment.

Cold abscess of the chest wall is a rare disease and few literature reports details of any treatment experience due to a limited number of patients. Hence, an optimal treatment plan remains controversial. Cold abscesses over chest wall are typically non-necrotizing and associated with slow onset and low morbidity. Effective management of cold abscess over chest wall ranges from antitubercular medication to wide surgical resection and subsequent reconstruction.

INTRODUCTION

Chest wall tuberculosis is rare and still a diagnostic and therapeutic challenge. Cold abscess, meaning swelling without inflammation, is the characteristic presentation of the chest wall tuberculosis. It can present as an isolated lesion without any primary foci in the lung parenchyma or in the ribs.

In our study, we have studied cases of cold abscess over chest wall with respect to its demographics.

We have also tried to establish role of pre-op CE-CT thorax in diagnosis of extent of abscess into the chest wall and involvement of ribs/sternum/pleura/lung.

We have also outlined different modalities of treatment used, and will try to establish the role of early surgical drainage followed by use of AKT in successful treatment of cold abscess over chest wall.

AIMS AND OBJECTIVES

AIM: To study role of pre-op CT scan and early surgical drainage in treatment of cold abscess over chest wall.

OBJECTIVES:

1. To study the incidence of cold abscess over chest wall with respect to-

A. Age and Sex

B. Socio Economic status

2. To establish role of pre-op CE-CT thorax in patients of cold abscess over chest wall in assessing involvement of ribs/sternum/pleura/lungs.
3. To establish role of surgical drainage of abscess followed by AKT treatment.

METHODOLOGY

This retrospective study was conducted on 54 patients with chest wall abscess who presented to Civil Hospital, Ahmedabad between 1st July 2018 to 31st July 2020.

Inclusion criteria: Patients with clinical features and radiological investigations (Chest XRay, USG local part of swelling, CE-CT thorax) suggestive of chest wall cold abscess were included in the study.

Exclusion criteria: All cases which clinically or radiologically proved the abscess as pyogenic were excluded.

Patients were studied focussing on their history of presentation and clinical features.

All patients underwent Chest Xray, USG local part and diagnostic aspiration of pus which was sent for AFB culture and Gene xpert.

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Based on USG findings, patients were divided in to three groups:

- Group A: Abscess < 2cm:Treated conservatively on AKT
- Group B: Abscess 2 to 5cm:Treated by therapeutic aspiration followed by AKT
- Group C: Abscess > 5cm: patient underwent CECT thorax preoperatively and then treated by surgical drainage followed by AKT

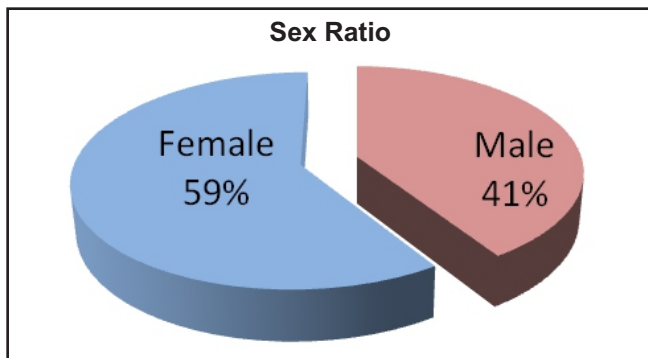
In all patients undergoing surgical drainage, 1 vial of Streptomycin powder was locally instilled and wound was closed using non absorbable suture ethilon 2-0. No drain was kept in the wound.

Pus and tissue from interventional procedures was sent for Culture and Sensitivity, Biopsy, CBNAAT, MOTT culture and Gene Xpert.

RESULTS

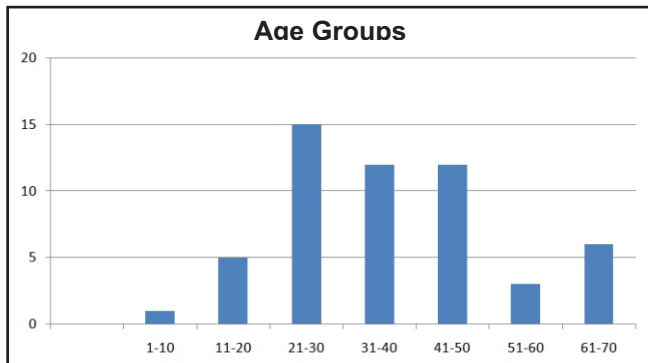
Out of 54 patients studied, 22 were male and 32 were female.

Fig. I: Sex Ratio in patients of cold abscess over chest wall.



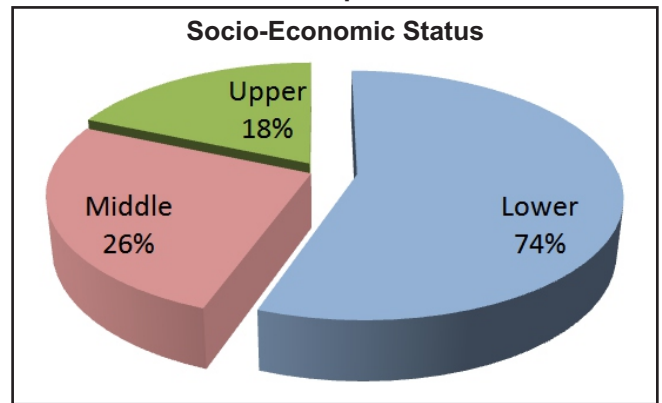
Mean age of the patients was 37.24 (9 to 70) years.

Fig. II: Age Distribution of patients with cold abscess over chest wall.



30 patients belonged to lower socio-economic status, 14 belonged to middle, whereas 10 belonged to upper socio-economic status.

Fig. III : Distribution based on socio-economic status of patients

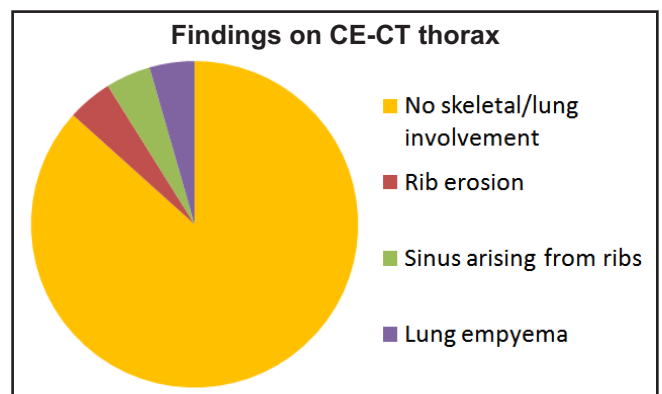


All patients presented with a growing chest wall lump, 2 presented with chest wall sinus.

Size of Abscesson USG	No. of Patients	Treatment
Group A (<2 cm)	6	Conservative (AKT)
Group B (2-5 cm)	3	Percutaneous Needle Drainage
Group C (>5 cm)	45	CE-CT Thorax F/B Surgical Drainage

Out of 45 pts who underwent CE-CT thorax,2 patients showed signs of rib erosion, 2 patients with sinus formation showed the sinus arising from the rib and 2 patients showed involvement of lung.

Fig. IV: Findings on CE-CT thorax

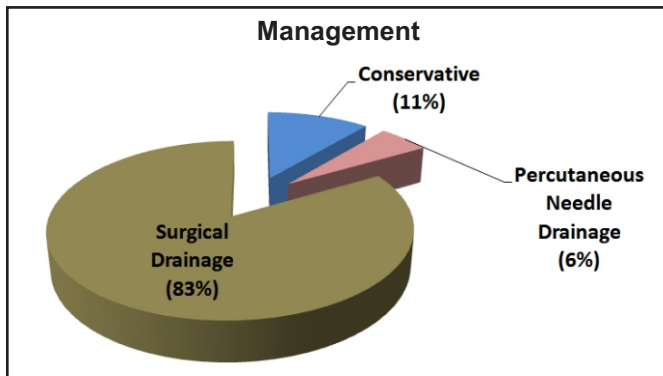


Group A: 6 patients were managed conservatively with AKT

Group B: 3 were treated by percutaneous needle drainage

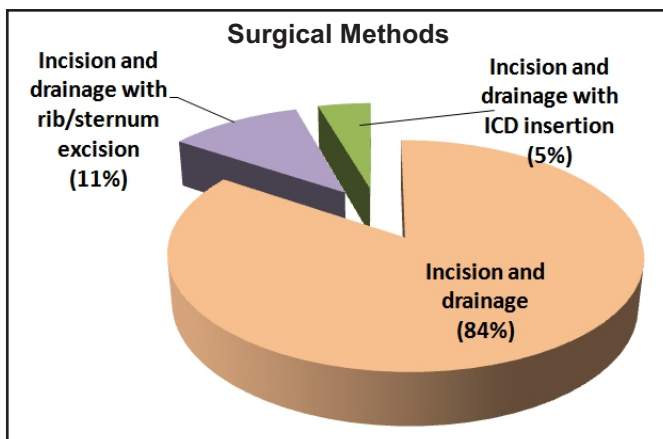
Group C: 45 were treated with surgical drainage of the abscess.

Fig. V: Modalities of treatment of cold abscess over chest wall



Surgical treatment included the following methods: incision and drainage in 38 (55.5%), incision and drainage of abscess with excision of ribs in 5 (7.4%), incision and drainage of abscess, closure of defect and ICD insertion in 2 (3.7%).

Fig. VI: Surgical methods of treatment



AKT was given for an average of 12 months in all the patients.

4 out of 9 patients (44.44%) treated with non-surgical methods, presented with recurrence.

None of the patients who were treated with surgical methods (45 patients), presented with recurrence.

DISCUSSION

In the present study, 54 cases of cold abscess over chest wall presenting to Civil Hospital, Ahmedabad between the time period 1st July 2018 to 31st July 2020 were studied. Currently available literature on cold abscess over chest wall was reviewed. After detailed history, clinical examination, relevant investigations and treatment, following observations were made.

Various factors associated with EPTB have been reported in the literature. According to a study by Pang Yu; An Jun

et al,¹ younger, female patients from rural areas were more likely to have EPTB. As seen in our study, majority of patients are young females (59%).

Also, 30 (74%) patients belonged to low socio-economic status.

All patients presented with a growing chest wall lump, 2 presented with chest wall sinus.



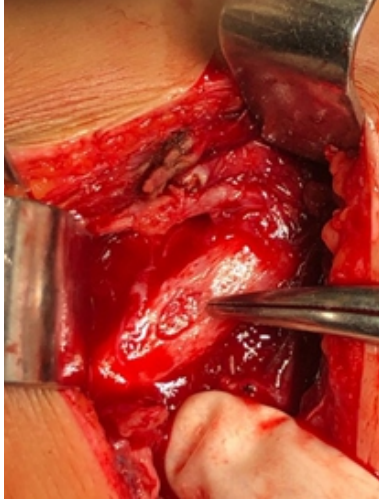
CE-CT thorax was done in 45 patients (out of 54) with size of abscess more than 5 cm to diagnose extent of abscess, its extension into the chest wall or the involvement of ribs. 4 patients showed rib involvement (2 patients had rib erosions and in 2 patients sinus tract was leading up to the ribs), which was not reported in chest Xray and 2 patients had underlying empyema of lung.

6 patients (Group A) were managed conservatively with medical management (AKT), 3 patients (Group B) were treated by percutaneous needle drainage and 45 patients (Group C) were treated with surgical drainage of the abscess.

According to a study by Tatelman M and Drouillard EJP, tuberculosis of the rib is an uncommon form of osteoarticular tuberculosis, and it occurs in 0-5% of cases of bone and joint infection². In our study, we see that ribs are involved in 7.4% of patients.

As per a study by Dong-Yoon Keum, Jae-Bum Kim³, complete excision of the abscess and primary closure of the wound with obliteration of space would decrease postoperative complications. Anti-tuberculosis medication may reduce the chance of recurrence.

Surgical treatment in our study included the following methods: incision and drainage in 38 (55.5%), incision and drainage of abscess with excision of ribs in 5 (7.4%), incision and drainage of abscess, closure of defect and ICD insertion in 2 (3.7%).



Out of the 5 patients operated for excision of ribs, 4 patients had shown signs of rib involvement on CE-CT thorax, which suggests that it is important to carefully look for signs of rib involvement intraoperatively.

According to a study conducted by S Cho, E B Lee, there is about 9.5% recurrence of chest wall tuberculosis and complete surgical resection may be needed to keep the recurrence rate low. In our study, majority of patients (83.33%) were treated surgically and showed no recurrence, whereas 4 patients (7.4%) treated conservatively showed recurrence.

Anti-tuberculous treatment was given in all patients for an average of 12 months.

CONCLUSION

Tuberculosis is a public health problem in developing countries.

Tuberculous abscesses of the chest wall, though uncommon are not infrequently encountered in countries endemic to the disease.

Chest wall cold abscess formation is the most common presentation of chest wall tuberculosis, and rib being the most common bony site affected in the thoracic cage.

Majority of patients are young females belonging to low socio-economic status, thus concluding that cold abscess over chest wall is more prevalent in lower socio-economic groups and in female gender.

There is increased incidence of cold abscess in patients with pulmonary tuberculosis and ribs/sternum/ pleura/ lung may also be involved.

A tuberculous abscess of the chest wall is usually shown on CT as a focal, well-marginated, inhomogeneous, hypodense lesion with a surrounding enhancing rim.

Bony sclerosis, periosteal reaction and sequestration are signs which can be seen on chest xray as well as CE-CT thorax.

CE-CT/ MRI localizes the exact site and extent of the abscesses, facilitating guided aspirations. It also helps in detecting typical bony lesions thereby, differentiating from pyogenic osteomyelitis besides ruling out associated pulmonary or pleural involvement in such patients.

Role of CT Scan: A direct communication with the pleura, a destroyed rib fragment in the abscess, and associated lung involvement may be revealed by CT, which may be missed on chest Xray. Thus, there is a definitive role of CE-CT thorax in patients of chest wall abscess.

However, even if CE-CT does not show any signs of rib involvement, it is important to look for same intraoperatively.

Majority of patients (45) were treated surgically and showed no recurrence, whereas 4 out of 9 patients (44.44%) treated conservatively, showed recurrence. Thus it can be concluded that there is a definitive role of surgery in treatment of cold abscess over chest wall.

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Original Articles

“A Study of Maternal and Perinatal outcome in Postdate Pregnancy”

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KEY WORDS : Postdate, Induction of labor.

ABSTRACT

Background: The risks to the fetus increase after 41 weeks mainly due to increasing fetal weight, decline in placental function, oligohydramnios which increase chances of cord compression, and meconium aspiration. Perinatal mortality after 42 weeks is twice as compared to the perinatal mortality at 40 weeks and by 44 weeks the rate is increased up to threefold. In cases of prolonged pregnancy, fetus is more at risk of hypoxia during labor than a fetus at term.

Methods: This cross-sectional observational study of fetomaternal outcome in postdated pregnancy (Women beyond 40 weeks of gestation) was carried out in the department of obstetrics and gynaecology in a civil hospital, Ahmedabad from January 2020 to January 2021.

Results: Majority of the patients are between 40 weeks one day to 41 weeks. Majority of the patients are prime gravida. In 34% patients LSCS are done and in 64% normal delivery done. 29% patients are induced with various methods of induction of labour.

Conclusions: The present study, we conclude that, the postdated pregnancy can be considered as a high-risk factor from the point of view of fetal outcome as there is more fetal morbidity.

INTRODUCTION

- ◆ It is defined as “Pregnancies that last longer than the estimated date of delivery according to the last menstrual period
- ◆ Postterm pregnancy (PTP) is defined as a pregnancy that persists beyond 294 days or 42 weeks of gestation^[1]
- ◆ The most cases of Postdate result from an inability to accurately define estimated date of deliver.
- ◆ The assessment of the gestational age by early ultrasound examination has reduced the “incidence” of Postdate by 50.0%.^[2]
- ◆ Prolonged pregnancy has always been regarded as a high-risk condition because perinatal morbidity and mortality is known to rise.^[3]

OBJECTIVE

- ◆ To study maternal and perinatal outcome in postdated pregnancies in a tertiary care hospital, civil hospital, ahmedabad.

METHODS

- ◆ A Prospective observational study carried out over a period of 12 months at a tertiary care hospital, civil hospital ahmedabad. Which includes both primigravida and multigravida beyond 40weeks of gestation admitted in civil hospital, ahmedabad. Maternal and perinatal outcome were studied.

ETIOLOGY

- *Postdated pregnancies may be the result of,^[9]
- 1. Error of the last menstrual period (most common)
- 2. More common in primigravida
- 3. Previous history of prolonged pregnancy
- 4. Maternal obesity^[10]
- 5. Placental sulfatase deficiency (an X-linked recessive disorder) which results in reduced placental estrogen synthesis. This leads to poor expression of oxytocin and prostaglandins receptors in myometrium.

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Risks associated with postdated pregnancy	
Maternal	Neonatal
Perineal trauma	Asphyxia
Operative interventions	Perinatal death
Cervical tear	Meconium aspiration
Postpartum hemorrhage	Pneumonia
Postpartum infection	Birth injuries

Table 1: Distribution of cases according to period of gestation

Period of gestation	Number of cases(%)
40 weeks 1 day to 41 weeks	88(88)
41 weeks 1 day to 42 weeks	12(12)
Total	100(100)

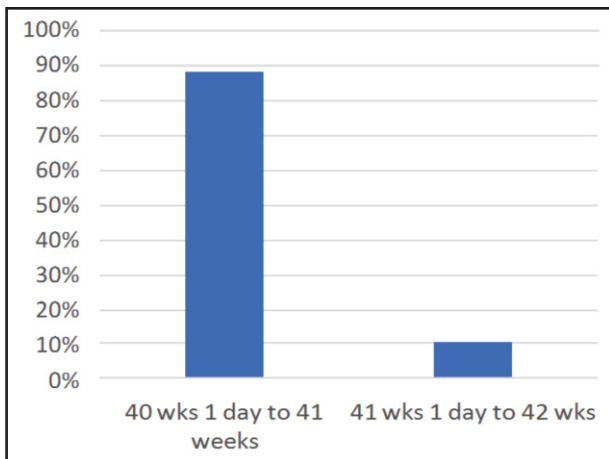


Table 2: Distribution of cases according to parity

Parity	Number of cases
Primigravida	78(78)
Multigravida	22(22)
Total	100(100)

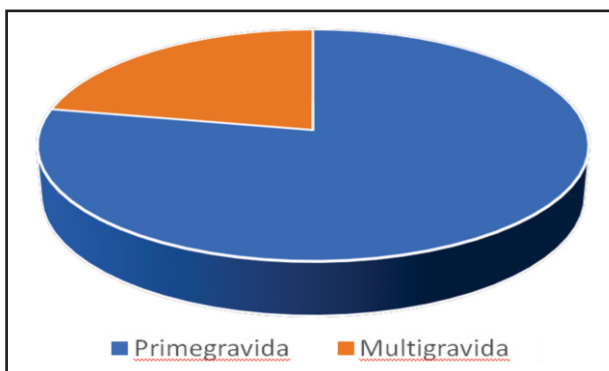


Table 3 : Comparison of mode of delivery with gestational age

Gestational age (weeks)	FTND	LSCS	INSTRUMENTAL DELIVERY
40 weeks 1 day to 41 weeks	57	29	2
41 weeks 1 day to 42 weeks	7	5	0
Total	64	34	2

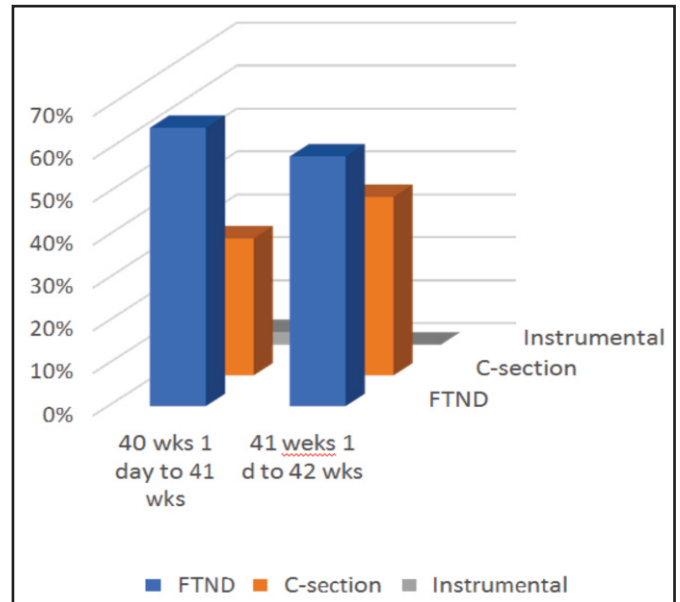


Table 4: Correlation of gestational age with type of normal delivery

Gestational age (weeks)	Total number of delivery	Induced labour	Spontaneous labour
40 weeks 1 day to 41 weeks	59(100)	24(40.67)	35(59.32)
41 weeks 1 day to 42 weeks	7(100)	5(71.43)	2(28.57)
Total	66(100)	29(43.94)	37(56.06)

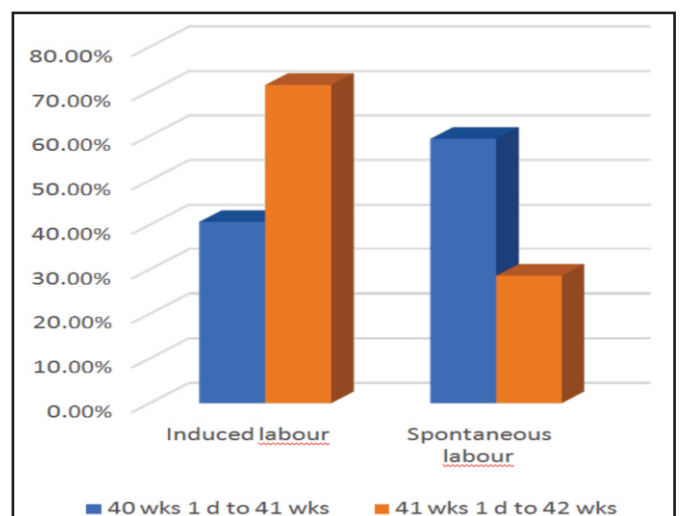


Table 5: Indications for lower segment cesarean section (n=34)

Indications for LSCS	Number of cases (%)
Cervical dystocia	1 (2.94)
Cephalopelvic disproportion	6 (17.65)
Failure of induction	7 (20.59)
Meconium stained liquor with fetal distress	9 (26.47)
Obstructed labour	7 (20.59)
Nonprogress of labour	4 (11.76)

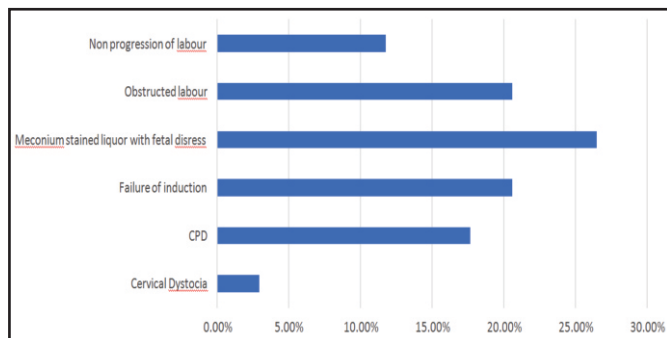


Table 6: Distribution of patients according to fetal outcome

Gestational age (weeks)	Total number of cases (n=100), n (%)	Baby with mother, n (%)	NICU, n (%)
40 weeks 1 day to 41 weeks	88(100)	80(90.90)	8(9.10)
41 weeks 1 day to 42 weeks	12(100)	4(33.33)	8(66.67)
Total	100(100)	84(84)	16(16)

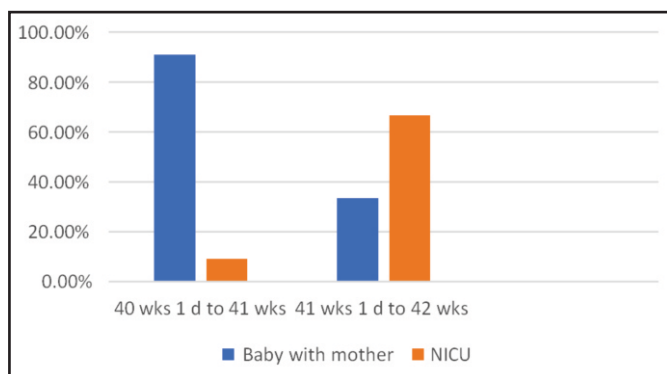


Table 7: Distribution of patients according to maternal complications

Maternal complication	Number of cases (%)
Oligohydramnios	17 (17.00)
Perineal tear	4 (4.00)
Atonic PPH	3 (3.00)
Shoulder dystocia	2(2.00)
Sepsis	1(1.00)

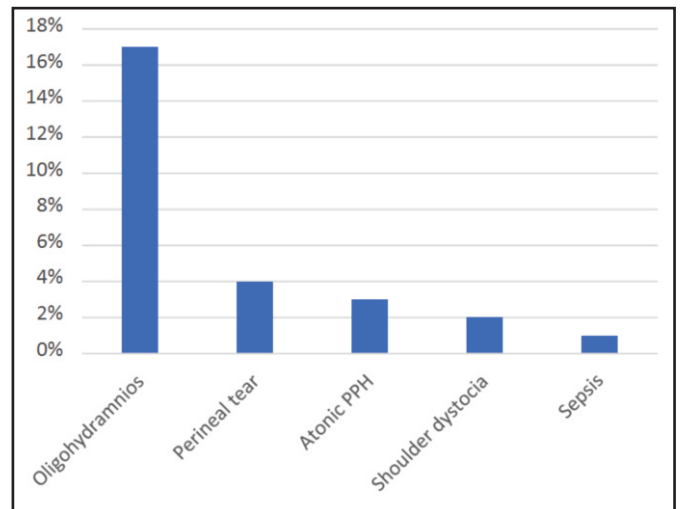
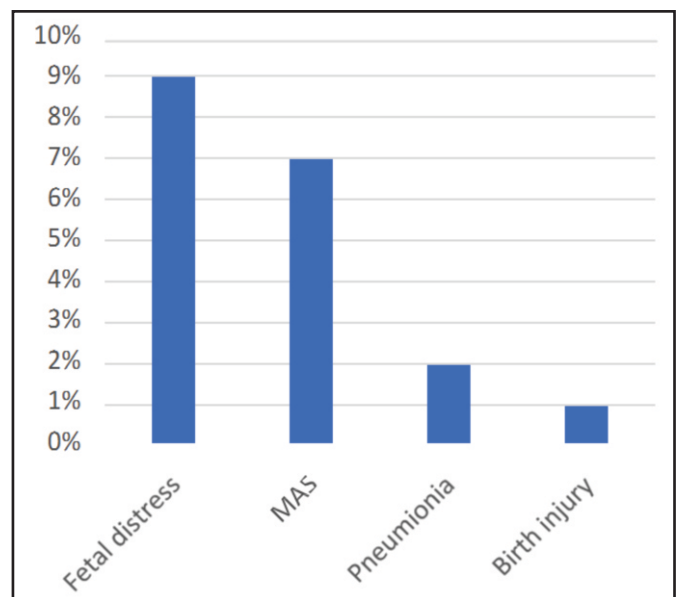


Table 8: Distribution according to fetal complications

Fetal complication	Number of cases (%)
Fetal distress	9 (9)
Mecomium aspiration syndrome	7 (7)
Pneumonia	2 (2)
Birth injuries	1 (1)



Most of the obstetricians prefer termination of pregnancy before 42 weeks as the risk of fetal mortality is doubled in pregnancies which have crossed 42 weeks than the pregnancies at 40 weeks.^[11]

METHODS OF COLLECTION OF DATA

Study design

- The study design was prospective observational study.

Setting

- The study was conducted by Department of Obstetrics and Gynaecology, B.J. Medical College, Civil hospital, Ahmedabad.

Duration of study

- Duration of the study was one year from JANUARY 2020 to JANUARY 2021.

Sample size

- The sample size is one hundred.

Inclusion criteria

- Pregnant women more than 40 weeks of gestation (last three menstrual cycles regular, not used contraceptive pills for the past 3 months, not conceived during lactational amenorrhea)
- Singleton pregnancy
- Vertex presentation

Exclusion criteria

- Any associated complications such as previous lower segment cesarean section (LSCS), malpresentations, placenta previa, abruption, PIH, gestational diabetes, anemia, and other medical complications
- Fetal anomalies.
- Pregnancy beyond 42 weeks of gestation.

OBSERVATIONS AND RESULTS

DISCUSSION & CONCLUSION

- In our study, prolonged pregnancy was associated with increased risks of perinatal and maternal complications.
- We observed pregnancy beyond 41 weeks increases rate of cesarean section and NICU admission.
- The adverse outcome can be reduced by proper antenatal counseling, fetal monitoring, and by terminating the pregnancy at appropriate gestational age.
- The patient should be counseled about risk of increasing gestational age. These women should be offered induction of labor before 42 weeks of gestation to avoid adverse neonatal consequences.

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Fetal Doppler Study of Umbilical Artery, Middle Cerebral Artery and Uterine Artery as Predictors of Adverse Perinatal Outcome in Fetal Growth Restriction

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ABSTRACT

AIM AND OBJECTIVES : 1) To study the association between the severity of IUGR and abnormal Doppler velocimetry of the umbilical, middle cerebral and uterine artery 2) To evaluate the predictive value of Doppler studies in IUGR with relevance to perinatal outcome. 3) To evaluate the efficacy of Doppler in the management of patients with IUGR. **METHODOLOGY:** Prospective observational study of singleton pregnant women irrespective of age or parity complicated by IUGR were enrolled during the study period from JANUARY 2019 to JANUARY 2020 **RESULTS AND ANALYSIS:** Out of the 100 patients studied, 78% belonged to age group 20-30 yrs, 12% were above 30 yrs and 12% were <20yrs. 44% of them were primi and remaining multipara. Among the various aetiology studied, 34% had h/o gestational hypertension, 31% had no specific history, 11% had association with anemia, 9% had heart disease and remaining had placenta previa or chronic maternal disease. 71% had weight gain between 6-10 kg whereas 9% had weight gain <5kg. 24% had severe oligoamnios whereas 41% had reduced liquor. The sensitivity y specificity positive predictive and negative predictive value of uterine artery in predicting perinatal outcome in IUGR is 68.75%, 54.68%, 61.1% and 84.37%. The sensitivity, specificity, positive predictive and negative predictive value of umbilical artery is 70.37%, 93.15%, 79.16% and 89.47%. The sensitivity, specificity, positive predictive and negative predictive value of middle cerebral artery 63.63%, 100%, 100% and 90.69%. **CONCLUSION:** Doppler velocimetry can be an important adjunct to conventional antepartum surveillance tests on patients with IUGR fetuses.

INTRODUCTION

Intrauterine growth is an important sign of fetal wellbeing. IUGR complicates 3-5% of pregnancies. It contributes significantly to perinatal morbidity and mortality. Intra uterine growth restriction is a common clinical sign of chronic fetal hypoxemia. It is difficult to differentiate between suboptimal fetal growth due to intra uterine starvation and adequate growth of a constitutionally small infant. Doppler plays an important role in IUGR where hemodynamic rearrangements occur in response to fetal hypoxemia. It is now proved that significant Doppler changes occurs with reduction in fetal grow at a time when the fetal well being tests are still normal. Early and accurate diagnose of IUGR may reduce the mortality and morbidity of fetuses with this condition. Successful perinatal outcome depends on proper management in the antepartum, intrapartum and neonatal period. The obstetricians must weigh the balance between

1. Conservative management in a potentially hostile environme versus.
2. Intervention which may lead to neonatal morbidity. This study explores the predictive value of fetal Doppler study of umbilical, middle cerebral and uterine arteries on diagnosing the adverse perinatal outcome in patients with IUGR.

AIMS AND OBJECTIVES

- 1) To study the association between the severity of IUGR and abnormal Doppler velocimetry of the umbilical, middle cerebral and uterine artery.
- 2) To evaluate the predictive value of Doppler studies in IUGR with relevance to perinatal outcome.
- 3) To evaluate the efficacy of Doppler in the management of patients with IUGR.

Study Place and Period

This study was conducted in Department of Obstetrics and Gynaecology, Civil Hospital, B. J. Medical College,

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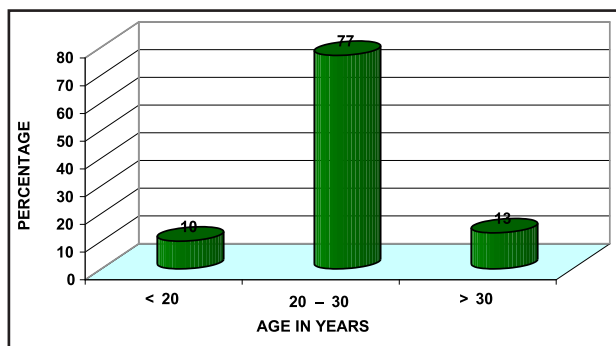
Ahmedabad . The study was carried out between the periods of JANUARY 2019 to January2020.

Method of study : In this study, antenatal pregnant women complicated by IUGR were identified .Ultrasound was done in the cases and the following parameters namely fetal biometry, estimated fetal weight, amniotic fluid index and Doppler ultrasound of the umbilical, middle cerebral and uterine artery were noted. Doppler USG was done with Duplex Doppler system . **Uterine Artery :** Uterine artery was examined with the probe kept 3 cm medial to anterior superior iliac spine and directed towards the lateral wall of the uterus. The cross over of the uterine artery and external iliac vessels was identified and the samples site was chosen. Waveforms were recorded from both uterine arteries. **Umbilical artery :** Flow velocity waveforms was recorded from the free floating loops in mid position. The diagnosis of the absent end diastolic flow or reversed end diastolic flow were made when same Doppler patterns was demonstrated in three separate sampling sites. **Middle cerebral artery :** Wave forms are recorded from MCA as it courses through the lateral sulcus. Colour Doppler is used to map the circle of willis.

RESULT

Table – 1 : Distribution of cases based on age

Age	No. of cases	Percentage (%)
< 20	10	10
20 - 30	77	77
> 30	13	13



(77 % belonged to age group 20-30 years, 13% were above 30 years and 10% were < 20 years)

Table 2: Distribution of cases based on Parity

Gravida	No.of cases	Percentage(%)
1	46	46
2	32	32
3	18	18
4 and above	4	4

(46% of them were primi, and 54% were multipara)

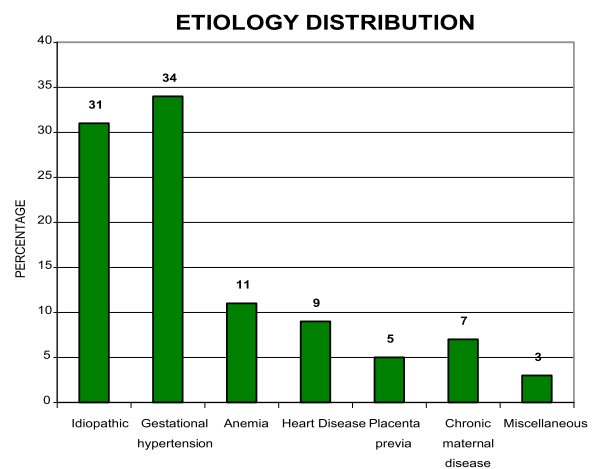
Table 3 : Distribution of cases based on AFI

AFI	No.of cases	Percentage(%)
< 5	34	34
6 – 10	41	41
11 – 15	19	19
> 15	6	6

(24% had severe oligohydramnios whereas 41% had reduced)

Table 4 : Distribution of cases based on Etiology

Etiology	No. of cases	Percentage (%)
Idiopathic	31	31
Gestational hypertension	34	34
Anemia	11	11
Heart Disease	9	9
Placentaprevia	5	5
Chronicmaternal disease	7	7
Miscellaneous	3	3

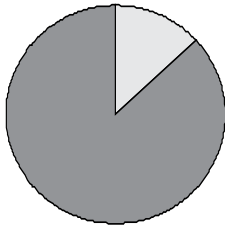


(It is seen that 34% had h/o hypertension on pregnancy where as 31% had no specific history, 11% had a

**Table 5 : (A) Distribution of cases based on FL / AC
(B) Distribution of cases based on HC/AC**

FL/AC	No.ofcases	Percentage(%)
Normal	13	13
Abnormal	87	87

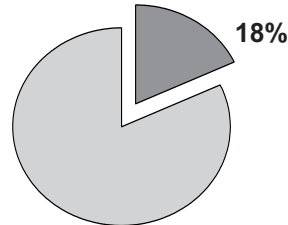
A



87%

HC / AC	No.ofcases	Percentage(%)
Normal	18	18
Abnormal	82	82

B



82%

It is seen that 13% had normal FL/AC and HL/AC thereby having asymmetrical IUGR. Around 87% had abnormal FL/AC and HC/AC thereby having asymmetrical IUGR.

**Table 6 : A) Uterine artery Doppler value distribution and perinatal outcome
B) Correlation of Uterine artery Doppler with pregnancy outcome**

Uterine artery Doppler	Perinatal Outcome	
	Normal	Abnormal
Normal (64)	54	10
Abnormal (36)	14	22

A

Uterine artery Doppler	Preeclampsia	IUGR	NICU admission
S/Dratio	33	33	22
RI	29	29	29
Early diastolic notch	38	38	25

B

Uterine artery Doppler flow was normal is 64%, So of those 54 cases (84%) had good perinatal outcome and 16% had abnormal outcome. Abnormal flow pattern in uterine artery was seen in 36%. 22 of them had abnormal perinatal outcome : 38% patients developed preeclampsia , 38% developed IUGR, 25% required NICU admission. This indicates that notch in uterine artery is associated with poor pregnancy outcome.

**Table 7 : A) Umbilical artery Doppler value distribution and perinatal outcome
B) Correlation of Umbilical artery Doppler with pregnancy outcome**

Uterine artery Doppler	Perinatal Outcome	
	Normal	Abnormal
Normal (76)	68	8
Abnormal (24)	5	9

A

Uterine artery Doppler	Preeclampsia	IUGR	NICU admission
S/Dratio	60	40	40
RI	13	25	12
Absent diastolic flow	100	100	0

B

Umbilical artery flow pattern was normal in 76% of cases, out of these 10% had abnormal perinatal outcome. Abnormal umbilical artery flow was seen in 24% of cases, out of which 79% had abnormal perinatal outcome. 38% patients developed preeclampsia 38% developed IUGR , 25% required NICU admission . This indicates that notch in uterine artery is associated with poor pregnancy outcome.

Table -8 : Middle cerebral artery Doppler value distribution and perinatal outcome

MCA Doppler	Perinatal Outcome	
	Normal	Abnormal
Normal (86)	78	8
Abnormal (14)	0	14

MCA Doppler flow pattern was normal is 86% of cases, out of which 90.6% had good perinatal outcome. Abnormal MCA Doppler flow pattern was seen in 14% cases, out of which 100% had abnormal perinatal outcome.

Table 9 : Distribution of cases based on type of Delivery

Type of delivery	Number	Percentage(%)
Vaginal	33	33
Assisted vaginal	7	7
LSCS	60	60

60% Cases were delivered by C SECTION , 33 % BY VAGINAL DELIVERY AND REST 7 % BY ASSISTED VAGINAL DELIVERY.

SUMMARY

In this prospective study in a set up of tertiary level care centre, whose inflow, includes Indian women from rural sector, the predictive values of various Doppler indices have been evaluated. The prevalence of IUGR (less than 10th percentile) was 8% . Among the 100 patients studied 36 patients had abnormal Doppler of uterine artery, with 15 patients having unilateral notch and 3 having bilateral notch. There were

24 patients with abnormal umbilical artery Doppler, with 6 of them having absent end diastolic flow and 8 having reversal of diastolic flow. Out of these 100 patients studied, 33 patients developed pre eclampsia.. It is seen that notch in uterine artery is a better predictor of pre eclampsia. The sensitivity, specificity, positive predictive and negative predictive value of uterine artery in predicting perinatal out come is

68.75%, 54.68%, 61.1% and 84.37%. The sensitivity, specificity, positive and negative predictive value of umbilical artery in predicting perinatal outcome is 70.37%, 93.15%, 79.16% and 89.47%. The sensitivity, specificity, positive and negative predictive value of MCA in predicting perinatal outcome is 63.63%, 100%,

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Case Report

Moyamoya Syndrome associated with Acute Promyelocytic Leukemia – A case Report

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KEY WORDS : Moyamoya disease, Moyamoyasyndrome, Acute promyelocyticleukemia

ABSTRACT

Moyamoya, meaning a "hazy puff of smoke" in Japanese, is a chronic, occlusive cerebrovascular disease involving bilateral stenosis or occlusion of the terminal portion of the internal carotid arteries (ICAs) and/or the proximal portions of the anterior cerebral arteries and middle cerebral arteries (MCAs) & the development of a network of abnormal collateral vessels. Moyamoya-like vasculopathy when develops in association with various systemic diseases and conditions, is then termed as Moyamoya syndrome (MMS). Acute promyelocytic leukaemia (APL) is not included in the list of conditions associated with Moyamoya syndrome. Here we report a case of Moyamoya syndrome associated acute promyelocytic leukaemia.

INTRODUCTION

Moyamoya disease (MMD) is a rare entity characterized by progressive large intracranial artery narrowing and the development of prominent small vessel collaterals which produces a characteristic smoky appearance on angiography, hence the name "Moyamoya," a Japanese word meaning puffy, obscure, or hazy, like a puff of smoke in the air.¹ MMD was first described in Japan in 1957. Thereafter, many cases have been reported in other Asian countries. MMD refers to patients with Moyamoya angiographic findings who may have genetic susceptibilities but no associated conditions also called as primary or idiopathic Moyamoya disease.² MMS refers to patients with Moyamoya angiographic findings who also have an associated medical condition such as myeloproliferative disorders³ etc. There is a bimodal distribution in the age of onset, with one peak at approximately 10 years of age and a second broader peak at approximately 40 years of age.⁴ We present a case of late onset Moyamoya syndrome associated with APL.

CASE REPORT

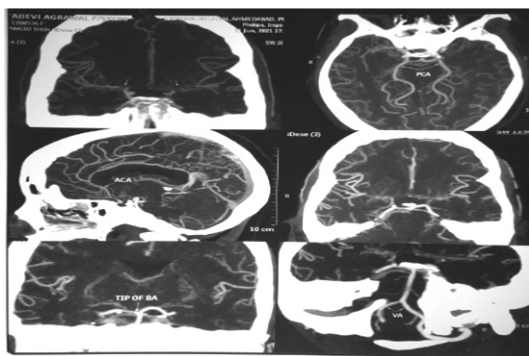
A 58 years old female known case of hypertension, diabetes, hypothyroidism with history of COVID disease 6 months prior, completed COVID vaccination 2 months back presented to emergency department with complaints of low grade fever since 2 days and 1 episode of seizure at home associated with generalized tonic posturing of all 4 limbs with clenching of teeth and frothing from mouth without soiling of clothes lasting for

2-3 minutes and not associated with an aura. On admission the patient was conscious, oriented and rest of the examination was normal. Patient was given injection levetiracetam loading and her urgent Magnetic Resonance Imaging (MRI) Brain with angiogram was done which showed abrupt narrowing of supra-clinoid Internal Carotid Artery with multiple collaterals replacing Anterior Cerebral Artery and Middle Cerebral Artery with small infarcts of variable ages in supra-tentorial cerebral parenchyma with small foci of haemorrhages seen in right frontal and parietal subcortical region which was suggestive of Moyamoya disease. Her Electroencephalography (EEG) showed diffuse - generalised slowing of background with 7-8 Hz theta range activity. Her Computed Tomography (CT) Brain Angiography was done in view of possibility of Moyamoya disease and which confirmed the findings of MRI brain. Patient's workup for vasculitis was negative. Other known commonly associated conditions with Moyamoya syndrome were investigated for and ruled out.

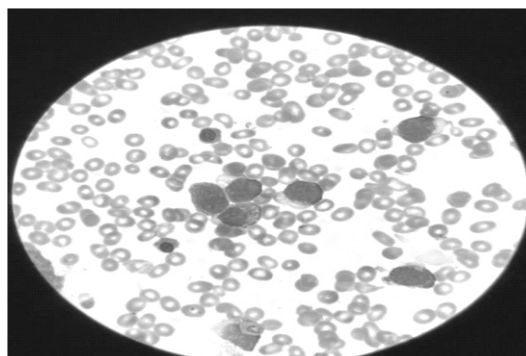
Her Complete Blood Count showed severe pancytopenia with promyelocytes on peripheral smear and a possibility of myelodysplastic syndrome v/s acute leukaemia was considered and patient underwent bone marrow biopsy which confirmed the diagnosis of APL. Patient was given Injection Arsenic trioxide, tablet Hydroxyurea, 2 units of Packed Cell Volume and 4 units of Random Donor Platelets. On 3rd day of admission, patient developed breathlessness and hypotension & found to have pneumonitis with pleural effusion a possibility of Differentiation syndrome versus infection leading to

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CT ANGIOGRAPHY



PROMYELOCYTE



sepsis was thought of and Inj. Arsenic trioxide was stopped and she was managed with vasopressors, higher antibiotics, antifungal drugs and non-invasive mode of ventilation, patient gradually improved with treatment and was discharged in stable condition.

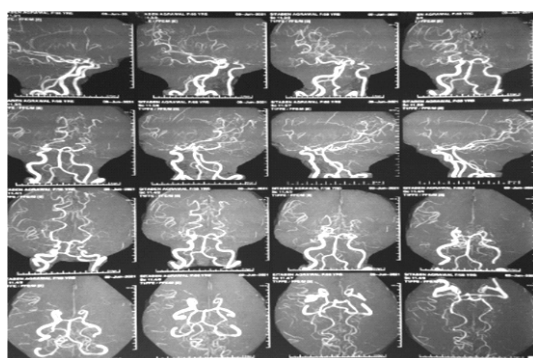
DISCUSSION

The pathophysiology in Moyamoya includes arterial stenosis and small vessel collateralization due to vessel wall thickening and angiogenesis. A genetic susceptibility is implicated in MMD, while underlying associated conditions trigger the development of MMS. Vascular changes in Moyamoya are associated with increased angiogenesis-related factors, including endothelial colony-forming cells, various cytokines, vascular endothelial growth factor and basic Fibroblast Growth Factor.⁵ The clinical presentations in Moyamoya in descending order of frequency are ischemic stroke, recurrent Transient ischemic attack (TIA's), Intra cerebral haemorrhage.⁶ Patients with Moyamoya present infrequently with seizures, often secondary to ischemic damage and are more common in children.⁷ Definitive diagnosis of Moyamoya requires neurovascular imaging. Diagnostic criteria for MMD proposed by Japanese research committee are-

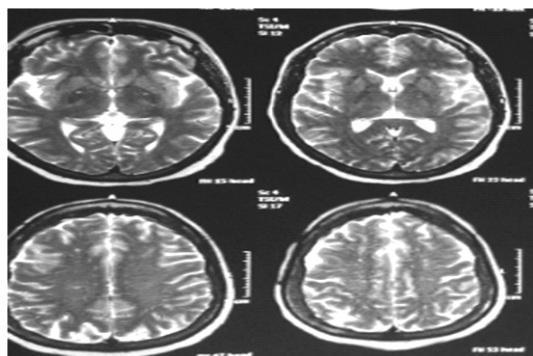
- Stenosis or occlusion at the terminal portion of the internal carotid artery and at the proximal portion of the anterior and middle cerebral arteries,
- Abnormal vascular networks in the basal ganglia; which can also be diagnosed by the presence of multiple flow voids on brain MRI,
- Angiographic findings are present bilaterally; cases with unilateral angiographic findings are considered probable.

For the diagnosis of MMD, underlying associated conditions (suggestive instead of MMS) are to be excluded.⁸ In MMS, conditions associated could be causative or syndromic. MMS is associated with haematological conditions such as Essential thrombocythemia (ET) which present with increased

MR ANGIOGRAPHY



MRI T2 FLAIR



ELECTROENCEPHALOGRAPH



frequency of thrombotic events including TIA's and stroke.³ APL is not included in the list of conditions associated with MMS as it more commonly manifests with coagulopathy rather than a thrombotic state. But increasing evidence is now available that a less common but equally important prothrombotic state exists in APL which can manifest as ischemic strokes, deep venous thrombosis, pulmonary embolism, myocardial infarction⁹. The mechanisms proposed are-

- fibrin thrombi involving micro-vasculature occur as a component of the more common DIC spectrum ,
- leukemic promyelocytes make direct contribution to the thrombotic tendency via expression of tissue factor (TF) and cancer procoagulant (CP).
- compared to other acute leukaemia's , APL cells express CP at higher levels and myeloid cell-derived TF-bearing microparticles have been demonstrated in higher amount in the plasma of these patients.¹⁰

As our case had a later presentation than usual for Moyamoya and other commonly associated conditions were ruled out with extensive investigations we propose that APL is likely to have played a major role in the etiopathogenesis of MMS in our case. Although further research is a must to confirm our hypothesis.

Treatment of MMD is symptomatic and for MMS the associated condition has to be treated.

CONCLUSION

In conclusion we present possibly the first case of Moyamoya syndrome associated with acute promyelocytic leukaemia. Seizure though less common as the initial manifestation of Moyamoya in adult can be the presenting symptom as seen in our case. Associated conditions especially haematological disorders should be looked for in each case of Moyamoya. Early diagnosis and proper treatment of associated condition are important to improve the prognosis.

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Case Report

Gossypiboma penetrating into the small intestine similar to Meckel's diverticulum, umbilical fecal fistula: a rare case report and literature review

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KEY WORDS : Retained surgical sponge Foreign body granuloma Gossypiboma , umbilical fecal fistula

ABSTRACT

Gossypiboma is the name to the tumour like structure within the body, composed of non-absorbable surgical material with a cotton matrix. Due to medico legal implications, cases of retained surgical sponges are rarely reported . incidence estimated to occur in one of every 1,000 to 1,500 intra- abdominal operations.

We herein introduce the case of a 44-year-woman with gossypiboma penetrating into the small intestine presented with umbilical fecal fistula. She had a history of vaginal hysterectomy 10 years ago. A contrast-enhanced computed tomography revealed diverticulum like structure arising from anti mesenteric border of mid ileal loops(18x4x6 cm approximately) containing air bubbles.laparotomy with resection of contained meckels diverticulum performed .patient discharged satisfactorily on 7th post operative day .To prevent any such adverse event sponges are counted by hand before and after surgeries.

Declaration of competing interest: All authors have no conflict of interest to declare. Ethical approval: All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional and national research committees.

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INTRODUCTION

Postoperative intraperitoneal foreign body is one of the artificial complications that may arise following surgery^[1-3]. The term "gossypiboma" comes from the Latin word 'gossypium' (cotton) and the Swahili word 'boma' (place of concealment), and refers to a mass within a patient's body comprising of a cotton matrix surrounded by a foreign body granuloma. Some cases are asymptomatic and discovered coincidentally, whereas others experience acute abdomen such as sepsis (fistula formation), intestinal obstruction, perforation, bleeding^[1-3].

Case reports of intraperitoneal foreign bodies, such as retained surgical sponges, are limited in the literature,^[4-6]. Here, we report a case of gossypiboma penetrating into the small intestine similar to Meckel's diverticulum., Case report A 44-year woman presented due to discharging fecal material from umbilicus since 15 days. She had a history of undergoing vaginal

hysterectomy 10 years ago;At the time of the current admission, heart rate: 68 bpm; blood pressure: 117/64 mmHg). Laboratory test results were within normal range.contrast-enhanced CT Scan revealed diverticulum like structure arising from anti mesenteric border of mid ileal loops(18x4x6 cm approximately) containing air bubbles. (Fig. 1).

Fig. 2 – Coronal image, contrast-enhanced CT scan

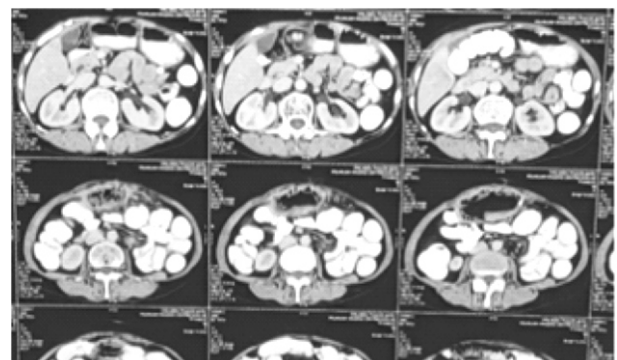


Fig. 1

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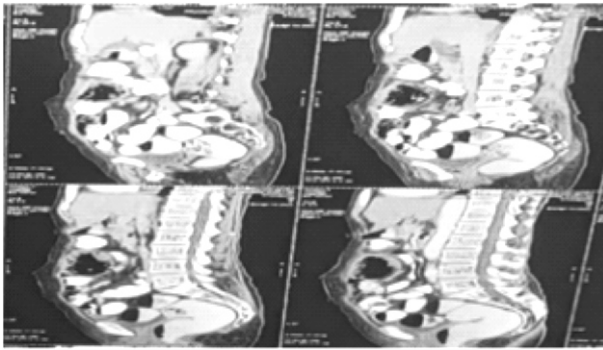


Fig. 2

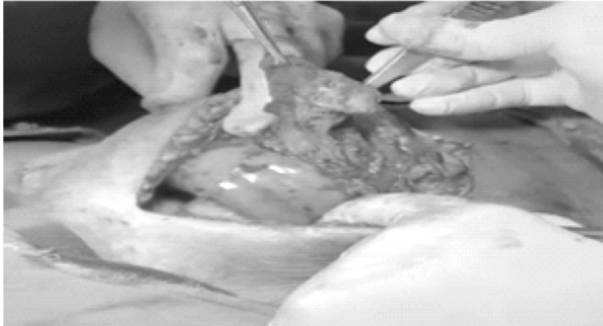


Fig. 3

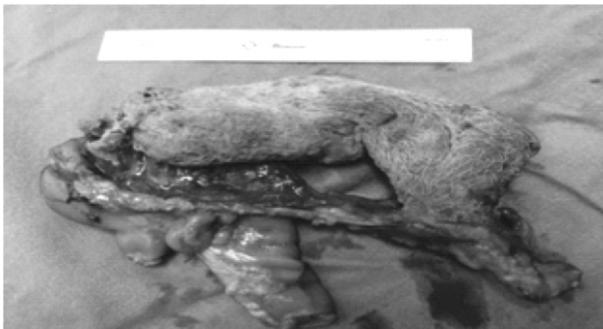


Fig. 4

(arterial phase). In coronal sections, the mass was connected and continuous with the small intestinal lumen, located on the opposite side of the mesentery with contrast enhancement. On laparotomy an artificial cotton fibrous material (i.e. pad) were found inside.

Operation findings revealed a mass was found 60 cm proximal to i.c. Junction, opposite to the mesentery. A small intestinal resection anastomosis performed.

On laparotomy a necrotic substance and an artificial cotton fibrous material (i.e. pad) was found inside meckels diverticulum lumen (Fig. 3), 2 feet proximal to ileocolic junction, connecting to umbilical opening.

The macroscopic appearance of the resected specimen showed that the mass opposite the mesentery included a portion wherein granulation tissue and the small intestinal wall were apparently continuous and looked like a diverticulum (usual site of meckels). It was speculated

that a fistula had formed as a route for excretion of the pus due to an increase in the tumor internal pressure with pus retention; further, repeated mechanical stimuli due to adhesions were also thought to be involved in the fistula formation.

DISCUSSION

Postoperative intraperitoneal foreign body is an artificial complication of surgery, and it is expected that the number of reported cases is less than the real count due to the social background of this iatrogenic disease. Since the late 1980s, countermeasures against the perpetuation of foreign bodies in the abdominal cavity have included the use of surgical sponges with radiopaque markers as well as thoroughly counting the number of surgical sponges and confirming the correct number is present outside the body before closing the abdominal surgical wound. Despite these countermeasures, gossypiboma is a complication that is sometimes still encountered. According to previous reports^[1-7], the intraperitoneal duration of retained surgical sponge varies. Some cases were not diagnosed until several decades after the initial surgery^[7]. like in this case, the patient had a history of vaginal hysterectomy decade prior, but no episodes of acute abdomen that required treatment had arisen in the time since until the current report of gastrointestinal fistula. Imaging characteristics of gossypiboma showed that gas was trapped by the cotton fibers. However, the image findings of retained surgical sponge differ depending on the intraperitoneal indwelling period. In daily clinical practice, such resembles a CT observation of gauze packing conducted for damage control for uncontrollable hemorrhage in severe trauma. In this case, CT showed a heterogeneous high-density mass with apparent air bubbles inside that was communicating with the small intestinal lumen, Meckel's diverticulum was also identified because it was located on the opposite side of the mesentery. There is still no established knowledge of the mechanism by which intraperitoneal foreign body granuloma penetrates the intestinal tract^[7-9]. Robinson et al.^[10] stated that the intestinal tract adheres around a foreign body, inflammation causes necrosis of the intestinal wall, and foreign bodies (pad) enter the intestinal tract by intestinal peristalsis.

Wattanasirichaigoon et al.^[11] also reported that peristalsis is significantly involved in the penetration of the small intestine. This case involved adhesion between the mass and the Radiology Case Reports 15 (2020) 655–659 jejunum, and mechanical stimulation by peristalsis may

have contributed to the penetration of the small intestine. Pathologically, the infection of foreign body granuloma and the accumulation of pus is evident. As a result of the progression of infection to the foreign body granuloma, it was presumed that, as a result of an increase in intratumoral pressure, a fistula formed together with the adhering jejunum acting as a drainage route for pus.

CONCLUSION

We present a case of gossypiboma penetrating the jejunum, prompting the appearance of gastrointestinal fistula in a manner similar to small intestinal diverticular fistula. The presence of artificial fibers (threads) using DBE helped establish the diagnosis.

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Case Report

Unilateral Orbital Kimura's Disease

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KEY WORDS : ·Kimura's Disease (KD), Rare entity, Eosinophilia

ABSTRACT

Kimura's disease is a rare chronic inflammatory disorder seen in young Asian males. Along with subcutaneous swelling, raised IgE levels and eosinophilia are noted. It is so rare that only 200 cases are noted in India till date.

INTRODUCTION

Kimura's disease is a chronic inflammatory disease benign in nature affecting the subcutaneous tissues mainly in head and neck regions associated with eosinophilia and raised IgE levels.^[1] Orbits, adnexa as well as salivary glands are affected.^[2] It is rare in terms of the fact that only 200 cases have been reported in India.^[3] Etiology is poorly understood but auto-immune or allergic reactions are said to be the causes. It is more prevalent in young males between the ages of 20 and 40 years. Male to female ratio is approx.. 3:1.^[4,5] The populations mostly affected are East Asians, Caucasians, African Americans, Hispanics and Middle –Eastern descent.

CASE REPORT

a young male patient, 25 years old, presented to us with the complaint of swelling adjacent to the medial canthus of the right eye. {FIG 1} Duration of the swelling was 6 months. It was painless. Patient also complained of itching in the whole body and episodes of rashes. Routine lab investigations showed eosinophilia with the

Figure 1 : Face photo showing lesion



Figure 2 : Lymphoid follicle with Germinal Centre, Low Power View

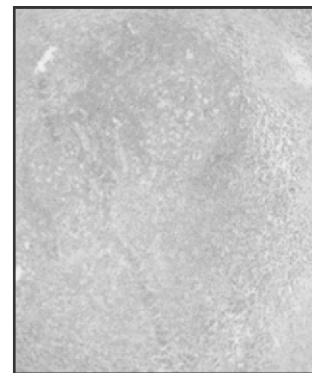
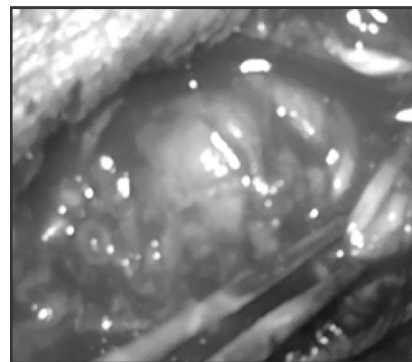


Figure 3 : Tumour Mass



counts being 14%, the normal value of which is 1%-6%.

IgE levels were done which were near the higher limits 152.4 IU/ml, the normal value of which is between 0.5 and 158 IU/ml. vision in both eyes was 6/6. There was no previous history of any such swelling anywhere in the body. Excision biopsy was done and sample {FIG 3} was sent for histo-pathological examination which showed lymphoid follicles with hyperplastic germinal centre,

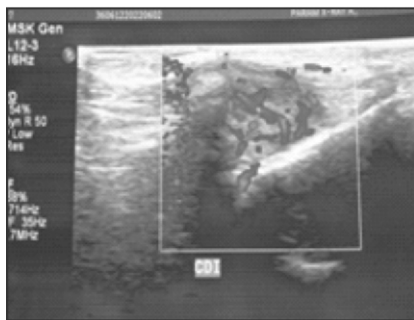
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Figure 4 : MRI showing the Vascular Lesion



Figure 5 : Doppler ultrasound showing blood flow



vascular proliferation, inflammatory infiltrate consisting of eosinophils, lymphocytes and plasma cells.{FIG 2}. Colour Doppler of the local part showed vascular etiology. {FIG 5}. MRI showed vascular lesion. {FIG 4}

DISCUSSION

Kimura disease is a rare chronic inflammatory disorder first described by Kim and Szeto in 1937 as “eosinophilic hyperplastic lymphogranuloma” .After Kimura et al. described it in Japanese literature in 1948, it has been known as Kimura disease. It is more common in middle aged males and Asian population although, sporadic cases have been reported in the non-Asian people as well. [5]Mostly it is seen in 2nd and 3rd decades of life, the male to female ratio being 3:1.[4,5] It presents commonly as subcutaneous nodules in the head and neck regions, mostly unilateral and may be associated with regional lymphadenopathy with or without the involvement of salivary glands. Orbits, eyelids, palate, pharynx, axilla, groin and arm may be affected. [6,7]

The pathogenesis of the disease is not clearly known and is said to be triggered by allergic reaction to persistent antigenic stimuli [8]. Proliferation of CD 4= T cells and overproduction of the cytokines trigger the production of lymphoid follicles and Ige. This sensitivity to antigens also

predisposes the patient to have asthma, pruritus, chronic urticarial and rhinitis. Upto 60% of population with the disease show renal involvement manifesting as extra membranous glomerulonephritis and nephrotic syndrome.[9] Smearsshow significant numbers of eosinophils in a background of lymphoid cells with occasional fragments of collagenous tissue and Warthin-Finkedlypolykaryocytes.[10] The diagnosis is not easy and differential diagnosis includes angiolymphoid hyperplasia with eosinophils(ALHE), Hodgkin's disease, Kaposi sarcoma, eosinophilic granuloma, epitheloid hemangioma, Castleman's disease, tuberculosis, dermatopathic lymphadenopathy, lymphadenopathy of drug reactions, parasitic lymphadenitis,eosiniphilic granuloma, epitheloid hemangioma and many more, the closest being ALHE. But there are a few distinctive features that differentiate both. KD occurs predominantly bin Asians with a male predilection. Patients usually have peripheral eosinophiliaand elevated serum IgE levels. The solitary lesions are mostly in the subcutaneous tissues, frequently associated with the regional lymphadenopathy and salivary gland involvement. By contrast, ALHE occurs in all age groups with slight female predominance. Patients present with small superficial dermal papulonodules, frequently erythematous, accompanied by bleeding, pruritus and tumour growth. Regional lymphadenopathy, serum eosinophilia and elevated IgElevels are rare.[11] Histologically KD has three components: 1. Cellular(inflammatory infiltrates including increased eosinophils and follicular hyperplasia) 2. Fibrocollagenous and 3.Vascular(arborizing vascular proliferation of the postcapillaryvenule, endothelial cells are usually flat and lack cytologicatypiaor vacuolization). In contrast to KD, vascular proliferation is most important in ALHE, forming aggregates or lobules comprising of plump endothelial cells with epitheloid or histiocytoid changes demonstrating cytologicatypia and vacuolization. Imaging studies might be diagnostic and can help in staging the extent and progression of the disease as well as the lymphnode involvement.

Therapies for KD include surgical excision, steroid and radiation. Surgical excision may be considered first especially for the localized lesion, even if recurrence is possible. Systemic steroids show good effects on the disease progression. Although, withdrawal can often result in relapse. Radiation has been utilised for steroid resistant lesions.

CONCLUSION

The relevance of this case is due to the rarity of the disease which mimics neoplastic conditions. KD should be considered as a differential diagnosis in patients presenting with head and neck mass and lymphadenopathy and investigated accordingly. Knowledge of KD will help physicians with a better diagnosis and treatment of the disease.

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Case Report

Neonatal Chikungunya Infection with Perioral Hyperpigmentation

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KEY WORDS : CHIKUNGUNYA, NEONATAL SEPSIS, PERIORAL RASH

ABSTRACT

Background : During outbreak of Chikungunya, Neonatal Chikungunya Infection is not that uncommon and should be suspected as closest differential diagnosis of sepsis

Case Characteristics : Both babies had postnatal infection, one presented as signs and symptoms similar to sepsis, both had hyperbilirubinemia and typical perioral hyperpigmented rash after Phototherapy.

Message : Perioral Hyperpigmentation is consistent with Neonatal Chikungunya Infection

INTRODUCTION

Chikungunya fever is caused by RNA virus of Togaviridae family with genus as alphavirus. It is transmitted by Aedes mosquito. The disease typically presents with high grade fever, rash, arthralgia, malaise, body ache in adults and in neonates it can present as fever, refusal to feed, excessive cry, irritability, exaggerated jaundice and in rare but severe cases as encephalopathy, bleeding due to thrombocytopenia, multiorgan failure. The closest differential diagnosis is sepsis.

CASE-1

3 day old new born admitted in NICU with chief complaints of yellowish discoloration of eyes and skin, low grade fever 1 day, refusal to feeds. Baby was LSCS born/ CWAB/2.5kg/Male. Mother was 3Rd Gravida with previous history of twins. Had taken treatment for Infertility in previous pregnancies. G1- LSCS /Twin Delivery, 1 male had imperforate anus, was operated but expired on 2nd day of operation. Female baby A/W. G2- again twins, both male babies IUD at approx. 16 weeks. Mother had no other significant history, was on regular follow-ups and there was no h/o fever during pregnancy. After delivery on 2nd day mother had moderate grade fever with high CRP which was treated with antibiotics. Fever responded in 2 days.

Baby was admitted in NICU, investigations were sent and started on first line antibiotics with single surface phototherapy. Baby was accepting feeds orally. On 5th day of life baby developed episodes of desaturation with

decreased activity and refusal to feeds. CRP was mildly raised. As presentation was similar to early onset sepsis baby was upgraded on antibiotics with oxygen and IV fluids. Baby improved in 24 hours. On 7th Day of life baby developed hyperpigmentation over face and body predominantly around oral and nasal region. It was similar to that of chikungunya infection in new born so Chikungunya IgM was sent which came Positive. As mother also had fever postnatally, her CG IgM was also sent. It also came Positive. Later baby was fine and discharged without any complications. On follow up to 3 months baby's MRI Brain, EYE examination, Hearing examination were normal. ECHO showed small ASD. Growth and milestones are normal.

CASE-2

4 day old male new born was admitted in NICU with complaints of excessive irritability, crying and yellowness of face and body. No H/o fever. Was taking feeds. Baby was FTVD/3Kg/CWAB/AGA and was discharged after 2 days along with mother from postnatal ward. Mother had H/O mild fever on 2nd day of delivery. Treated with paracetamol. No other significant History.

Baby was admitted, basic investigations were sent and started on phototherapy with exclusive breast feeding. After 2 days of admission baby developed typical perioral and paranasal hyperpigmented rash. Repeat investigations including Chikungunya serology was sent. Septic screen was negative. CRP was high and Chikungunya IgM was positive. There was no fever or any other complaints. Baby was discharged on 12th

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Neonatal Chikungunya Infection With Perioral Hyperpigmentation



DOL. Mother's Chikungunya IgM was sent and it also came positive. On follow up baby's hyperpigmentation decreased and growth and development are normal.

DISCUSSION

Chikungunya (CHIK) virus is member of genus Alpha virus in the family of Togaviridae transmitted to humans by vector like *Aedes aegypti* and *Aedes albopictus*. The incubation period ranges from 3 to 12 days. {1} The onset is usually abrupt and the acute stage is characterized by sudden onset with high-grade fever, severe arthralgias, myalgias, and skin rash. Swollen tender joints and crippling arthritis are usually evident. {2} Chikungunya fever appears to have a direct impact on pregnancy with a higher risk of abortion in the first trimester and mother-to-child transmission in the last trimester. The time of greatest risk of transmission of Chikungunya virus from mother to foetus appears during birth if mother acquired the disease few days before delivery. {3,4,5} Neonates present at 3-5 days of life with fever, excessive crying, dermatological manifestations like maculopapular rash, nasal blotchy erythema, freckle like pigmentation over Centro facial area, vesiculo-bullous lesions, apnoea, in rare but severe cases shock, DIC, and neurological manifestation like seizures, disturbed level of sensorium. Thus, Chikungunya in neonates can present with protean clinical manifestations. Clinical examination and high index of suspicion are essential in clinching the diagnosis as the presentation can mimic other commonly seen emergencies like septic shock or acute CNS infection. {6} Diagnosis is made by CHIK IgM and RT-PCR. Viral culture is the gold standard for the diagnosis of Chikungunya fever. Reverse transcription polymerase chain reaction and real-time loop-mediated isothermal amplification have also been found to be useful. Serodiagnostic methods for the detection of immunoglobulin M and immunoglobulin G antibodies against Chikungunya virus are more frequently used. {7} Treatment is

predominantly symptomatic; however, severe cases of chikungunya may require fluid management and intensive care management and monitoring. {8} Prevention by educating the community and public health officials, vector control measures appear to be the best approach at controlling Chikungunya fever as no commercially available vaccine is available for public use in India for this condition presently. {2}

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Case Report

ANCA Associated Vasculitis (AAV) Presenting as Mononeuritis Multiplex

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KEY WORDS : ANCA Associated Vasculitis (AAV), Granulomatosis with Polyangiitis (GPA), mononeuritis multiplex

ABSTRACT

Mononeuritis multiplex can be the presenting manifestation of many diseases like Hansen's disease , diabetes , amyloidosis , vasculitis etc. Amongst all vasculitis, antineutrophil cytoplasmic antibody (ANCA)- associated vasculitis (AAVs) are a group of disorders causing severe, systemic, small- vessel inflammation and are characterized by the development of autoantibodies to the neutrophil proteins leukocyte proteinase 3 (PR3-ANCA) or myeloperoxidase (MPO- ANCA). The three AAV subgroups, namely granulomatosis with polyangiitis (GPA), microscopic polyangiitis (MPA) and eosinophilic GPA (EGPA, previously known as Churg–Strauss syndrome), are defined according to clinical features. Each of them can have varied neurological manifestations.

INTRODUCTION

AAVs are diseases characterized by inflammation of blood vessels, endothelial injury and tissue damage. The three AAVs, GPA, MPA and EGPA; feature a loss of tolerance to neutrophil primary granule proteins, most often leukocyte proteinase 3 (PR3) or myeloperoxidase (MPO).¹ Out of them, GPA is predominantly associated with PR3- ANCA and its clinical features typically include characteristic symptoms of ear, nose, and throat (ENT), lungs and renal involvement. Nervous system can be involved in form of mononeuritis multiplex, sensory neuropathy, cranial nerve abnormalities, central nervous system mass lesions, external ophthalmoplegia, and sensorineural hearing loss.^{2,3} Peripheral nervous system involvement is noted in approximately 15 percent of patients with GPA.^{4,5} Here we present a case of 61 years old female who presented with clinical picture of mononeuritis multiplex which was subsequently found to be due to AAV (GPA).

CASE

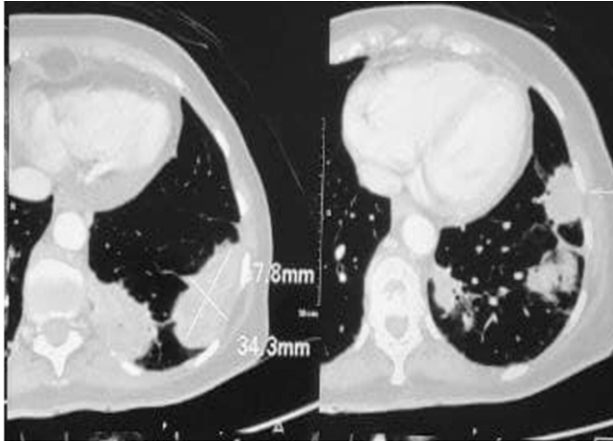
61 years old right handed female, no previous comorbidities, presented with one month history of numbness and paraesthesia of both lower limbs with weakness in form of difficulty wearing and slippage of chappals without awareness. Similar complaints of paraesthesia and weakness developed in her both hands over last three days. On detailed asking, there was history of left sided earache followed by hearing

loss in last December. For last 5 months she was also experiencing muscle and joint pain. She had lost significant weight (8-10kg) over these months. On examination, weakness was apparent in all 4 limbs (distal > proximal, right > left) along with weakness of small muscles of hands. Decreased sensation was found in both lower limbs upto thighs (right > left) and both hands. DTRs were normal in UL, reduced at knee (+1/+1) and absent at ankle. Higher mental function, cranial nerves, cerebellar and autonomic system examination was normal. She could walk well without support. Romberg was negative.

Routine investigations were done which showed raised CRP, ESR with thrombocytosis, trace protein in her urine without active sediments and hypoproteinaemia. HIV/HbsAg/HCV screening was negative. S.ANA, S.ACE and S.tumor markers were also negative. Her C-ANCA (PR3- ANCA) was found to be strongly positive (25.8 AU/ml) with negative P-ANCA (MPO-ANCA). CECT abdo+ thorax and neck screening showed mucosal thickening with submucosal necrotic lesion in right lateral nasopharynx, multifocal subpleural lung parenchymal soft tissue lesions in both lungs, and mediastinal and bilateral hilar lymphadenopathy - p/o granulomatous etiology. MRI cervical spine with whole spine screening showed spondylotic changes at C4-C5 and C5-C6 level. MRI brain with intracranial angiography showed possible subacute infarct in left lentiform nucleus tail with normal angiography. Her NCV study showed changes of

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asymmetrical, predominantly motor, mixed, axonal and demyelinating polyneuropathy [right peroneal and tibial - conduction block and left tibial – severe axonal changes) s/o mononeuritis multiplex. In view of this clinical presentation and investigations, she was diagnosed as a case of mononeuritis multiplex due to ANCA associated vasculitis (GPA) and she was put on high dose methylprednisolone and cyclophosphamide.



MNC

Nerve / Sites	Muscle	Latency ms	Amplitude mV	Distance mm	Lat Diff ms	Velocity m/s
R Median - APB						
Wrist	APB	2.66	6.8	70		
Elbow	APB	7.14	6.6	240	4.48	53.6
R Ulnar - ADM						
Wrist	ADM	2.29	6.9	70		
B.Elbow	ADM	6.93	6.1	250	4.64	53.9
R Peroneal - EDB						
Ankle	EDB	3.70	6.0	80		
Fib head	EDB	12.03	0.5	300	8.33	36.0
L Peroneal - EDB						
Ankle	EDB	3.70	2.0	80		
Fib head	EDB	11.25	2.0	320	7.55	42.4
R Tibial - AH						
Ankle	AH	5.21	1.1	80		
Pop fossa	AH	14.79	0.1	390	9.58	40.7
L Tibial - AH						
Ankle	AH	4.11	0.3	80		
Pop fossa	AH	13.33	0.5	390	9.22	42.3

SNC

Nerve / Sites	Rec. Site	Onset Lat ms	Peak Lat ms	NP Amp µV	Distance mm	Onset Dif ms	Onset Vel m/s
R Median - Orthodromic (Dig II, Mid palm)							
Dig II	Wrist	2.19	2.66	33.3	130	2.19	59.4
R Ulnar - Orthodromic, (Dig V, Mid palm)							
Dig II	Wrist	1.72	2.19	12.0	110	1.72	64.0
R Sural - Ankle (Calf)							
Calf	Ankle	2.19	2.97	9.9	110	2.19	50.3
L Sural - Ankle (Calf)							
Calf	Ankle	1.93	2.76	11.1	110	1.93	57.1

DISCUSSION

In 2012, revised Chapel Hill consensus⁶ defined ANCA-associated vasculitis (AAV) as necrotizing vasculitis having few immune deposits or sometimes no immune deposits, characteristically involving small vessels, usually associated with p-ANCA or c-ANCA and may be ANCA negative. Three major categories include GPA, MPA, and Eosinophilic GPA (Churg–Strauss syndrome). GPA is usually suspected in a patient who presents with

constitutional symptoms along with clinical evidence of glomerulonephritis or upper or lower respiratory tract involvement. The suspicion greatly increases if there is laboratory detection of antineutrophil cytoplasmic autoantibody (ANCA). It most commonly occurs in older adults.⁷ Males and females are equally affected. Patients typically present with nonspecific symptoms like fever, malaise, anorexia, weight loss, myalgias, and arthralgias, which may last for weeks to months without evidence of specific organ involvement. As a result, GPA is frequently misdiagnosed initially as infections, malignancies, or inflammatory joint disease. When lesions involve specific systems, clinical picture becomes clear. Ear, nose, and throat involvement is seen in 90 percent cases in form of nasal crusting, sinusitis, otitis media, earache, otorrhea, purulent/bloody nasal discharge, oral/nasal ulcers. Patients frequently develop conductive and/or sensorineural hearing loss which can lead to severe permanent hearing impairment.⁹ Involvement of airways or pulmonary parenchyma causes hoarseness, cough, dyspnea, stridor, wheezing, hemoptysis, or pleuritic pain. Renal involvement is also common in GPA but very few patients have evident glomerulonephritis at presentation.

Neurological involvement is least common in GPA amongst all three AAVs seen as mononeuritis multiplex, sensory neuropathy, cranial nerve abnormalities, central nervous system mass lesions, external ophthalmoplegia, and sensorineural hearing loss.

According to ELK diagnostic criteria (E for ears, nose and throat or upper respiratory tract; L for lung; and K for kidney) proposed by DeRemee and colleagues for GPA, any typical manifestation in the E, L or K supported by typical histopathology or a positive cytoplasmic ANCA (c-ANCA) test qualifies for the diagnosis of GPA.¹⁰

Our patient had these typical manifestations of ear and lower respiratory tract involvement with C-ANCA positivity though she had presented with asymmetric sensorimotor quadriparesis due to mononeuritis multiplex which is not so common in GPA.

The goal of therapy in patients with GPA is to achieve a rapid, long-standing remission with an induction regimen consisting of glucocorticoids in combination with either rituximab or cyclophosphamide and rituximab, azathioprine, methotrexate, and mycophenolate for maintenance therapy.

CONCLUSION

ANCA-associated vasculitis is a rare disease entity with varying presentation. Amongst all AAVs, neurological

involvement is less common in GPA but it can be the presenting manifestation as seen in our case. Immunosuppressive therapy with glucocorticoid plus cyclophosphamide can dramatically change outcome of ANCA-associated vasculitis which otherwise carries a high mortality.

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Research Article

Case Study on Pulmonary Tuberculosis

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KEY WORDS : Pulmonary Tuberculosis, Multi drug resistant, Patient counseling.

ABSTRACT

Pulmonary tuberculosis is a contagious, airborne infection which primarily attacks the lungs, if the therapeutic regimen was not complied it can lead to MDR (Multi drug resistant) condition. The effect of patient counseling can be chart with the episodic improvement which has been documented in the present case. The present case can demonstrate the role of pharmacist and the need of patient counseling in a disease condition like Pulmonary tuberculosis.

INTRODUCTION

Pulmonary tuberculosis is a contagious, airborne infection which primarily attacks the lungs. Proper medications and patient compliance is the better tool for its cure. Preventing latent TB and reinfection can be done by proper drug regimen and follow up with regular serum and sputum analysis. The following case is a reinfection of tuberculosis for a patient who is a known case of Type II Diabetes mellitus.

CASE REPORT

A 42 year old male who is a known case of Type II Diabetes mellitus visited the OPD department of GMERS Medical College Himatnagar, Gujarat, India with complete characteristic symptoms of pulmonary tuberculosis. His chief complaints were complete characteristic features illustrating infection of the acid fast bacilli. The patient was a known case of Type II Diabetes mellitus, which is a risk factor for Pulmonary tuberculosis. The educational status and socio economic status of the present case reveals that the patient's present condition was due to improper follow up and non-compliance towards the therapy. His past medical history reveals that the patient stopped therapy when he observed an symptomatic relief [1]. The patient was a smoker, alcoholic and takes mixed (Veg and non-veg) diet. On physical examination, the patient was conscious, febrile and poorly nourished. His blood pressure was normal, and all other vitals are found within limits [2]. The patient lab investigations and

serological reports confirm the presence of pulmonary tuberculosis, with the same organisms. Chest radiograph shows bilateral micronodular interstitial effusion. And the bronchial aspiration was found positive with the acid fast bacilli. The culture sensitivity results shows still the organisms are sensitive to the drugs prescribed in his past medical history. HIV reports were found negative, Neurological and ophthalmological reports were normal. The patient family history and his behavioral habits were observed to add points on patient counseling [3, 4].

The patient have Type II Diabetes mellitus which is not on control, his blood sugar reports that they are out of limits which needs proper therapeutic regimen which has to be followed till the next review. The patient was admitted in General medicine department and DOT therapy was initiated [5,6].

Table 1. Symptoms of Pulmonary tuberculosis

Sr. No	Characteristic features	Patient Symptom
1	Cough	+
2	Cough with blood	-
3	Consistent fever(low grade)	+
4	Night sweats	+
5	Unintentional weight loss	+

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DISCUSSION

The patient's data was collected with proper written consent, and the details collected were saved confidentially. Institutional Ethical clearance was received prior documentation. The patient was diagnosed with pulmonary tuberculosis with Type II Diabetes mellitus. The background of the present case states the patient is an illiterate and lives on low social and low economic status, which paved way for the present condition. The patient was admitted, DOT therapy was initiated and patient counseling with respect to drugs with their side effects, disease and life style modifications was done on each visit of follow up.

Routine serological and culture analysis was done to check the improvement of the present condition. The patient become asymptomatic in 2 months of regular follow up, patient counseling was done on each visit. Blood sugar reports were normal on the duration of course. Thus the impact of patient counseling in a patient and importance of patient counseling in a Tuberculosis therapy was highlighted.

CONCLUSION

Pulmonary tuberculosis can be easily transferred to MDR form (Multi drug resistant) if the patient is not been on complete DOT (Directly observed therapy) therapy. The patient was given a complete course of DOT therapy and counseled for both Pulmonary tuberculosis and Type II Diabetes mellitus, The patients symptoms resolved in 2 months and proper follow up was advised. As a pharmacist, it's a high time to focus on the area which needs proper care which can aim on better quality of life of the patients. The present case reveals that lack of awareness and patient counseling which contributes the present scenario of the case. Steps should be taken so that the patient can comply with the prescription which can improve the quality of life.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors

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Title Page

This should include the following:

Title of the article with type of manuscript such as case report, original article or short communication etc. A brief running Title and key words (maximum 3). Author's names with designations, Name and address of the Institution, Name and address for correspondence.

Text

The text should have appropriate subheadings like Introduction, Material and Methods, Observation, Discussion, Acknowledgements etc. Reference numbers should be superscript and not written in parenthesis. Only standard abbreviations should be used and should be preceded by the full form on its first appearance. Generic name of the drugs are preferred to the trade names.

Tables, Figures and Illustrations

Each table and figure should be typed on separate page, be numbered in Roman numerical and have a brief descriptive title. Photographs should be glossy, clear and should be marked at the back with pencil containing name of the articles and author/s and should indicate the top of the figure by an arrow. Colour prints can be made at the author's expense. Legends should be typed on a separate page.

Photographs

Photographs should preferably be Post-card size (6"x4"). GMJ will bear the cost of only two photographs per article. Additional photographs will be included on payment of Rs. 100/- per photograph.

References

References should be in the numerical order in which they are first cited in the text. Please follow the style of Index Medicus for references.

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