



CARDIOLOGICAL SOCIETY OF INDIA

Indore Branch

Fax : 0731-2538958, E-mail : csiindore@hotmail.com

Patrons :

Dr. G.C. Sepaha

Mob. 98260-40114

Dr. Vidyut Jain

Mob. 98260-15216



Senior Advisors :

Dr. Prakash Jain

Dr. M.C. Ajmera

Dr. P. Mehta

Dr. A.K. Pancholia



Past President :

Dr. Girish Kawthekar

Mob. 98270-22779



Past Secretary :

Dr. Nitin Modi

Mob. 98266-12225



Vice President :

Dr. S. Trivedi

Dr. D.L. Binnani



Clinical Secretary :

Dr. Sunil Sharma



Treasurer :

Dr. Govind Malpani



Executive Member :

Dr. R. Tharwani

Mob. 98260-40477

Dr. K.G. Gupta

Mob. 98270-34790

Dr. Manish Porwal

Mob. 98270-55997

Dr. A.D. Bhatnagar

Mob. 94250-91210

Dr. K.L. Prajapati

Mob. 94250-89268

Dr. Vinod Somani

Mob. 98260-44254

Dr. Idris Khan

Mob. 98260-67339

Dr. H. Manglani

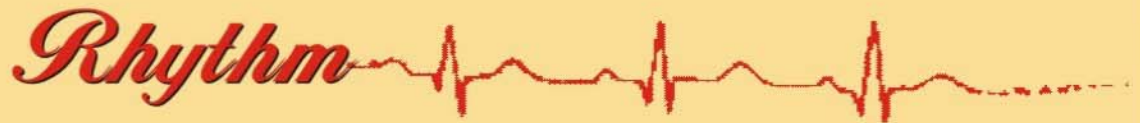
Mob. 98270-22116

Dr. Ulhas Mahajan

Mob. 98260-28555

Dr. Chhaya Bandishte

Mob. 94250-64546



EDITORIAL

CSI NEWS LETTER - JANUARY 2010

Combining multiple drugs in a single capsule is not a new concept. Long back Aspirin was combined with Atenolol. For Tuberculosis, Diabetes & HIV combination polypills are already available. Dr. Salim Yusuf first came out with combination therapy for C.V. Diseases in 2002. Wald & Law in June 2003, demonstrated 6 ingredients (including, 3 antihypertensives in ½ doses) in a pill for C.V. disease prevention above 55 years of age irrespective of risk factors. It was a promising kit to decrease mortality & morbidity of C.V. diseases and stroke.



Folic Acid is included for its anti Homocystin property.

Ingredients are as effective as they are individually.

Polypill are indicated in Syndrome X, Pre diabetics and those with high BMI. Diet & Exercise, do play very important role but if the person is at high risk and can not adhere to a strict regime, then polypill is must for him. For reducing pill & bill load, such formulations are important. However different formulations, ingredients and long term trials are needed to establish its efficacy.

Dr. Manish Bandishte,
M. 98260-20141

FETAL ECHOCARDIOGRAPHY



Normal situs showing the stomach and aorta on left side of spine (Left). Normal heart position, levocardia (Right)

Four Chamber view of the heart

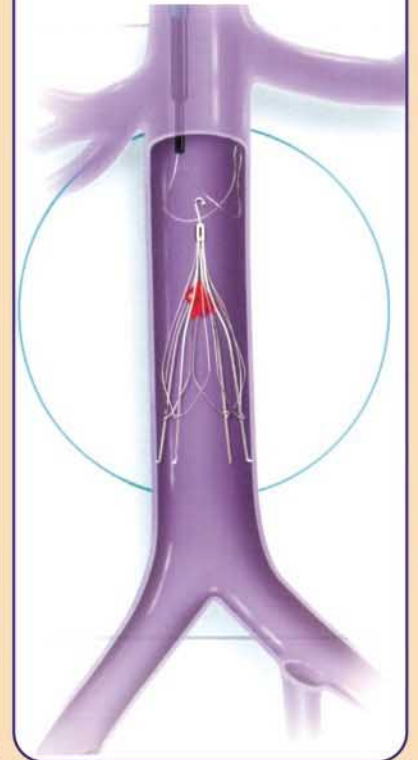
Left ventricular outflow tract view



Right ventricular outflow tract view

3 Vessel view

IVC FILTER



BUDGERIGAR BIRDS



Evening Roll Call



Adult Male



Blue male



Melopsittacus Undulatus Flock



Eating fruit

President's Desk ...

Happy New Year,

Dear Members we are starting this year with loads of academic activities, starting of with release of this CSI letter RHYTM. Last year we had a successful World heart day celebration activities which were included in World Heart foundation website. Apart from this we had regular monthly clinical meeting, a session with Obstetric Gynaec society (special thanks to Dr. Arvind Pancholia) & another interesting session with Psychiatrist. On 5th september on Teachers day we Felicitated our revered teachers. We are preparing for our own website in near future, please send your articles on cardiology as well as "Beyond medicine" including arts, photos or any other extracurricular activities so that it can be included in our website. Please mail it at csiindore@hotmail.com . Let's hope that these activities go on with full throttle this year. Long Live CSI Indore!



Dr Ashok Sethia

Secretary's Desk ...

Dear Friends,

At the onset, please accept my greetings for the year 2010. It's been almost 10 months, when I was supported by all of you as a secretary of the CSI, Indore chapter. In the last 10 months, I have tried to be a part of the team, suggesting new ideas, accepting suggestions and ultimately making it a smooth sailing.

With the new year coming, we have a lot to take up as challenge, many routine events/ activities to execute and see a couple of dreams coming true. This would not happen without your cooperation.

Your suggestions and feedbacks have always been on my top priority.

Thanks and Best Regards



Dr. Alkesh Jain

Glimpses of Clinical Cardiology in Indore

-Dr. Prakash Jain

Long back in 1934 Prof S.K. Mukherji donated a ECG Machine to KEH Medical School. This became the foundation stone for development of Cardiology in Indore.

This department was updated in 1935 by the generous efforts of Sir Govind Ram Seksaria and hence department received the name Shri Govindram Seksaria Cardiology Department.

At this time department was equipped with ECG machine Bellistocardiograph, BMR Machine and fluoroscopy machine.

In 1955 Dr. Nagrath joined cardiovascular-surgery and did good cardiovascular surgery, this included closed mitral valvotomy, pericardiectomy, PDA closer and a variant of Vineberg procedure in which Internal mammary artery is implanted in pericardium for the treatment of ischemic heart disease.



In the same year, 1955 Cardiology department joined Indian Heart Foundation as a branch. This Continued for a few years. This was followed by formation of local Indore. Cardiological Society Foundation. This in 1985 became the branch of Cardiological Society of India.

Regular papers were presented and published by the department in conferences and published in Indian and Foreign Journals. The reference from above articles were sited in Friedberg's Diseases of Heart Text Book.

Dr. P.K. Sen and associates in 1966 organized an open heart surgery camp under the banner of Cardiology Department and did valve surgeries.

By this time right heart catheter studies had become the routine of every Saturday. This study included oxymetry of various blood samples taken during above procedures. Patients included were Cor-pulmonale, Pulmonary hypertension and various shunts. Once during these procedures Dr. D. Mukherji did one coronary angiogram with cine - recording. Unfortunately it could be seen only during fluoroscopy, as there was no projector available.

INTERESTING CASE

ELLIS-VAN CREVELD SYNDROME

- Dr Ashok Sethia

A 10 year old short statured boy presented with OS ASD (which was repaired), failure of growth, dental anomaly, dystrophic nails & abnormal facies (wide angled mouth & widely separated eyes), Ellis-van creveld syndrome is also known as: chondroectodermal dysplasia.

Etiology:

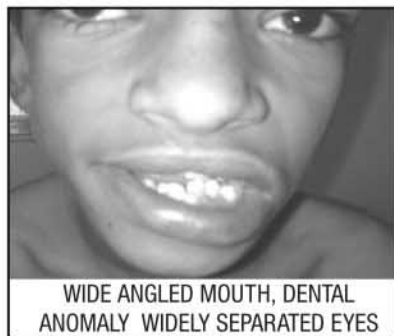
This rare, autosomal recessive chondrodysplasia is found among the old order Amish because of a founder effect and consanguinity.

Pathology:

Mutations have been identified in one or two genes, EVC and EVC2, which may very close to one another on chromosome number 4p, function of gene is not known.

Signs:

- Short stature (adults heights from 109cms to 152cms)
- Post axial Polydactyly
- Nail dysplasia



- Dental anomaly (including neonatal, absent, and premature loss of teeth and upper lip defect)

• Congenital heart diseases:

- ♦ one half of homozygous are affected
- ♦ most of them is atrial septum defect
- ♦ endocardial cushion closure defect including ostium primum defects of widely varying size up to single atrium
- ♦ defects thought due to abnormal embryonic flow (coarctation, hypoplastic left heart, and patent ductus arteriosus).

• Skeletal Radiographs:

- ♦ Reveal short tubular bones with clubbed ends, especially proximal ulna and tibia
- ♦ Cone shaped epiphysis are evident in hands
- ♦ A bony spur is often noted above the medial aspect of the acetabulum

Diagnosed prenatally by detection of polydactyly by ultrasound.

References:

1. Ellis, R. W. B.; van Creveld, S.: A syndrome characterized by ectodermal dysplasia, polydactyly, chondro-dysplasia and congenital morbus cordis: report of three cases. Arch. Dis. Child. 15: 65-84, 1940.
2. McKusick, V. A.; Egeland, J. A.; Eldridge, R.; Krusen, D. E. (1964). "Dwarfism in the Amish. I. The Ellis-van Creveld syndrome". Bulletin of the Johns Hopkins Hospital 115: 306-36. PMID 14217223

FETAL ECHOCARDIOGRAPHY

Dr. Atul Karande

Congenital Heart Disease (CHD) is the most common birth defect, occurring at a rate of 8/1000 births. Out of these about 3/1000 are major defects which may require life saving surgery in neonatal period. Nearly 180,000 children are born with heart defects each year in India. Of these, nearly 60,000 to 90,000 suffer from critical cardiac lesions requiring



early intervention. Recent studies have demonstrated that prenatal diagnosis of fetuses with heart defects improves the immediate outcome following delivery because they were born at tertiary hospital. The benefit of delivery at such centre is that the newborn baby can be evaluated and prepared for surgery. In addition fetal echocardiography allows for appropriate counseling to take place.

Timing of Examination:

Although fetal echocardiography can be performed at any time after 18 weeks of gestation, the optimal timing for performance of a comprehensive trans-abdominal fetal echocardiogram is 18 to 22 weeks

of gestation. Images can be more difficult to obtain after 30 weeks gestation, as the ratio of fetal body mass-to-amniotic fluid increases. The images of the fetal heart can be acquired at 12 to 18 weeks; however it is difficult for interpretation and may require repeat assessment at 18 to 22 weeks.

Indications:

• Maternal indications-

- a) Family history of CHD. b) Metabolic disorders eg- diabetes, Phenyl ketonuria. c) Exposure to teratogens. d) Exposure to PG synthetase inhibitors eg-ibuprofen, salicylic acid, indomethacin.
- e) Rubella infection. f) Autoimmune disease eg- SLE, Sjogren's. g) In vitro fertilization.

• Fetal indications-

- a) Abnormal obstetric ultrasound screening.
- b) Previous sibling or pregnancy losses with any known cardiac or extra-cardiac abnormality.
- c) Chromosomal abnormality. d) Arrhythmia.
- e) Hydrops. f) Increased first trimester nuchal translucency. g) Multiple gestation and suspicion of twin-twin transfusion syndrome. h) Intrauterine infections.

It is to be noted that detail echocardiography is indicated in all fetuses detected with increased nuchal translucency thickness during first trimester screening even if chromosomes are normal. The highest yield of congenial heart disease comes from patients referred for cardiac or extra-cardiac structural abnormalities detected by radiologist on routine screening or targeted anomaly scan.

Screening of fetal heart:

All radiologists should perform screening of heart (4-chamber view & outflow tracts) during all obstetrical ultrasound studies beyond 18 wks of gestation. Suspicion or detection of a fetal cardiovascular abnormality requires referral for a detailed fetal echocardiography.

Limited cardiac evaluation or screening of fetal heart can be done within 2-3 minutes by obtaining transverse view of upper abdomen and thorax at various levels. Size of the fetus is small at 20 weeks gestation so that to obtain these views a gentle sweep is required up through the thorax. Five views taken for screening of fetal heart are as follows. (See Figures)

- A. Upper abdominal view for abdominal situs.
- B. Four chamber view.
- C. Left ventricular outflow tract (LVOT) view.
- D. Right ventricular outflow tract (RVOT) view.

E. 3 -vessel view.

A) Abdominal situs -

The viscera-atrial situs can be identified by various ways but most specific of all is the orientation of vessels at the level of upper abdomen-

- a) Situs solitus: In normal subjects, stomach and aorta are to the left of spine and inferior vena cava (IVC) is on right side slightly anterior to aorta.
- b) Situs inversus: In situs inversus, stomach and aorta are on right of spine and IVC is on left side slightly anterior to aorta.
- c) Right atrial isomerism (Asplenia syndrome): In this condition both aorta and IVC are on one side of spine either left or right.
- d) Left atrial isomerism (Polysplenia syndrome): In this condition, IVC is absent at the level of upper abdomen. Venous structure located posterior to aorta is the azygous or hemiazygous vein which carries blood from lower part of body towards heart.

B) Four chamber view -

The four chamber trans-axial view acts as a reference plane for obtaining other views. About 60% of the heart defects can be detected on careful evaluation of four chamber view. Four chamber view can be obtained by taking a transverse view of fetal thorax. Features which suggest that we are in correct plane are a smooth rib outline and absence of stomach bubble. One should keep following points in mind while analyzing 4 chamber views:-

1. Heart size.
2. Heart position and axis.
3. Chamber symmetry.
4. Two normally and symmetrically opening atrio-ventricular (AV) valves
5. Intact interventricular septum (IVS)
6. Intact crux.
7. Pericardial effusion

(1) Heart size: Normal heart occupies less than 1/3rd of area of chest. Cardiomegaly is present when heart occupies more than 1/3rd of chest area.

(2) Heart position and axis:

a) Heart position:

Levocardia- Normal heart is located in left hemi thorax with apex towards left.

Dextrocardia- When heart is located in right hemi thorax with apex towards right.

Mesocardia- When heart is located in middle of thorax with apex towards midline.

Dextroposition- When heart is shifted towards right

side with apex towards left. This is seen in extra cardiac anomalies e.g. - Diaphragmatic hernia.

b) Cardiac axis: If we draw two imaginary lines first passing through spine & anterior abdominal wall and another passing through inter ventricular septum, angle between these two lines is the cardiac axis. Normal axis is $45^{\circ} \pm 20^{\circ}$. Left axis deviation is seen in- Truncus arteriosus, transposition of great arteries (TGA), double outlet right ventricle (DORV), coarctation of aorta (COA), tetralogy of Fallot's (TOF), Pulmonary stenosis, Ebstein's anomaly.

(3) Equal chambers: In normal heart, atria and ventricles are of equal size and contractility during second trimester. Examples of chamber asymmetry are coarctation of aorta, Hypoplastic left heart syndrome (HLHS), Hypoplastic right heart (HRH) and Ebstein's anomaly.

(4) Two opening AV valves: In normal heart, two separate AV valves open into two separate ventricles. Examples of AV valve abnormality are tricuspid atresia, atrioventricular septal defect and double inlet left ventricle.

(5) Intact IVS: A lateral 4 chamber view is ideal for evaluation of IVS. Malalignment VSD can be excluded by obtaining LVOT view of heart.

(6) Intact crux: Crux is the junction of membranous part of the interventricular septum, septum primum of interatrial septum and septal leaflets of the mitral and tricuspid valves. Crux of the heart is defective in atrioventricular septal defect.

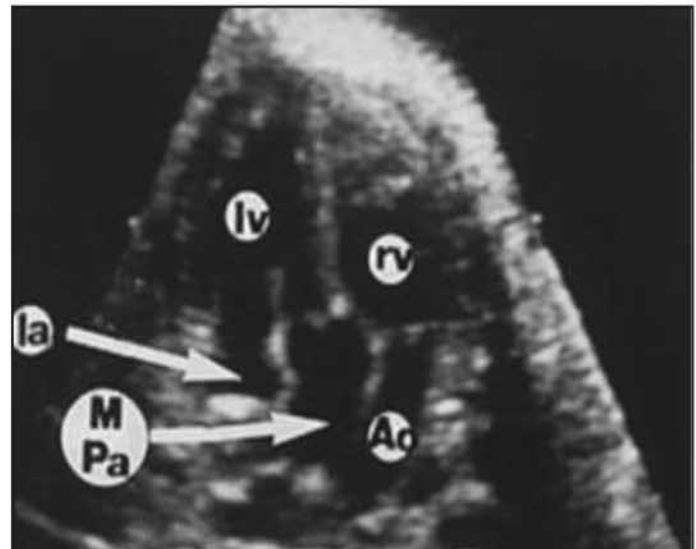
(7) Pericardial effusion: Small amount of fluid posterior to left ventricle which disappears in diastole is a normal finding. It is important only when fluid is noted at either surface of the heart. Pericardial effusion may be mild, moderate or massive.

C) Left & D) Right Outflow tract views -

In these views, one should look for the normal opening semilunar valves of the outflow tracts and their thickness. Any significant asymmetry in the size of outflow tracts is considered abnormal. Interrelationship (crossing over) of outflow tracts is important to rule out transposition of great arteries. CHDs which can be detected in the outflow tract views are - Tetralogy of Fallot, TGA), Truncus arteriosus, Pulmonary atresia, DORV.

E) 3 vessel view -

This view can be obtained by sweeping the



Both the outflow tracts are running parallel to each other in a case of complete Transposition of Great Vessels

transducer cranially towards fetal neck from the scan plane of RVOT view. In this view, the three vessels i.e. ductus arteriosus, transverse aortic arch and superior vena cava are normally oriented from left to right. Any abnormal orientation or asymmetry if present should be noted. This view is very useful in detecting pulmonary atresia, aortic atresia and coarctation of aorta. Otherwise coarctation of aorta is difficult to diagnose in fetal life. In normal fetuses, flow in ductus arteriosus and transverse aortic arch is in the same direction. Reverse flow in ductus arteriosus indicates pulmonary atresia and small transverse arch showing reverse flow is diagnostic of hypoplastic left heart syndrome.

Limitations of fetal echocardiography:

Because of small size of abnormal cardiac structures & limitations of resolution of equipment, several forms of CHDs are difficult to diagnose in fetal life eg:- Small VSD, partial anomalous venous connections, mild valvular stenosis, coronary artery anomalies & COA. Out of these, only coronary artery anomalies & COA have significant clinical implications if at all they are missed during examination. Some CHDs may be missed at early pregnancy because they develop or progress in severity later in gestation eg:- TOF, COA, restrictive foramen ovale & valvular stenosis or atresia. Some lesions have been reported to resolve as the pregnancy advances eg:- VSD, atrial septal aneurysm. Because of fetal circulation, it is not possible to diagnose certain conditions eg:- PDA, ostium secundum ASD.

