Cardio Mag

Volume 1|Issue 2|2020

Dear Doctor,
*Greetings from Micro Labs Limited. We are happy to bring you "**Cardio Mag**", which contains latest and interesting news in the field of Cardiology.*

This issue contains

- ***Gender differences in blood pressure during the course of life***
- ***Patent foramen ovale Closure : Unusual presentation as splenic infarction***
- ***Significant reduction of LDL Cholesterol with twice yearly administration of a drug***

Should you require any specific article or medical information, please feel free to contact us at ***medicalservices@microlabs.in***

Looking forward to your valuable feedback.
Best Regards,
Medical Team, Micro Labs Limited

Gender differences in blood pressure during the course of life

The hypertension-related disease burden represents a major global public health challenge among human populations worldwide. Huge evidence suggests that socioeconomic, psychological, physiological, metabolic, and genetic mechanisms underlying the development of hypertension are different between men and women[1]. Ischemic heart disease (IHD) and heart failure (HF), it is increasingly recognized that women are more likely than men to develop coronarymicrovascular dysfunction (CMD) and HF with preserved ejection fraction (HFpEF).

The objective of the study was to analyse the gender differences in hypertension and the course of the disease.

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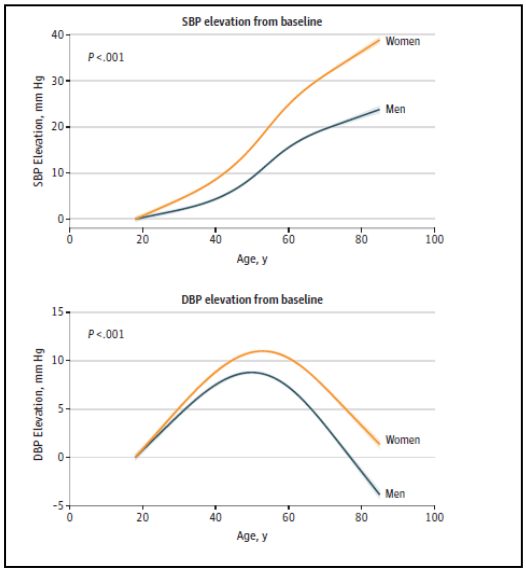
Methods:

This was a multi centric cohort study

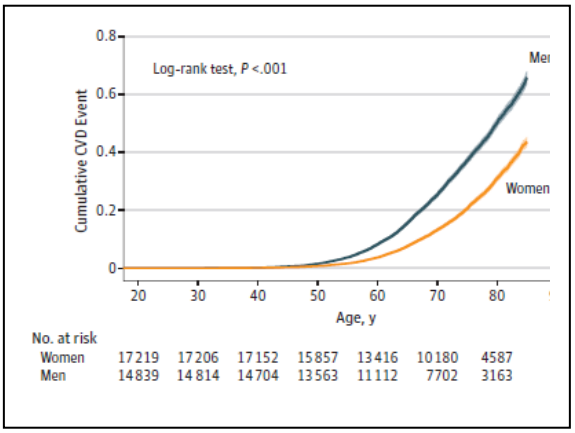
Gender-specific analyses of longitudinal BP measures were collected for a period of 43 years (1971 to 2014) involving 32 832 patients. Systolic BP (SBP) and diastolic BP (DBP)were assessed for seated participants who had been resting for at least 5 minutes using a mercury column sphygmomanometer.

To analyse gender-specific BP trajectories, specific CVD incidence was analysed as new-onset fatal or nonfatal myocardial infarction, HF, or stroke.



Results:

Out of 32832 , 17 732 women [54%]) contributed 144 598 observations during a 43-year period (1971-2014), with ages spanning 6 to 98 years, out of which 8130 participants (24.8%) had developed new-onset hard CV events.



There was a steep increase in BP in Women compared with men BP that began as early as in the third decade and continued through the life course (p <0.001) as shown in figure.

Difference in CVD risk in males and females there was a significant difference (p<0.001) are shown in figure.

Discussion :

Hypertension being the major risk factor for cardiovascular disorders, analysis of BP variation is important to know the course of the disease . Differences in gender variation in age-related BP elevation may be due to many causes, including differences in hormonal factors, chromosomal factors, complex social, economic, and structural environmental factors. Women compared with men have not only smaller total body size on average but also smaller organs, including the heart, and smaller vessel caliber, including the coronary arteries. MAP (a measure that grossly reflects small artery compliance) increases at a higher rate in women than men over the life span as in the current study. Higher rate of PP increase in women, reflects accelerated arterial stiffening and coinciding with greater concentric left ventricular remodeling.

Conclusion: progressive BP elevation increased more rapidly inwomen than in men, beginning as early as in the third decade of life, however important vascular diseases in women lag behind men by 10 to 20 years.

Reference:

1) Ji H et al. Sex Differences in Blood Pressure Trajectories Over the Life Course [published online ahead of print, 2020 Jan 15] .

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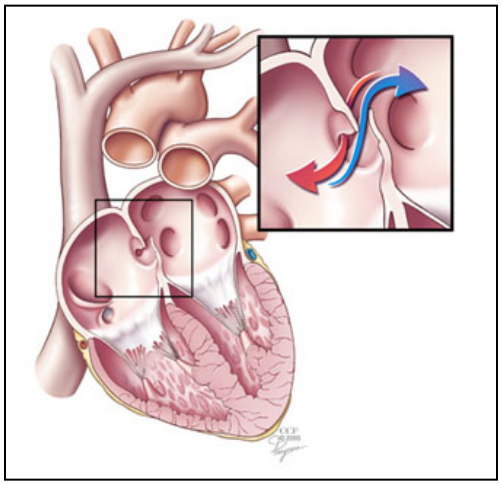
Patent foramen ovale Closure : Unusual presentation as splenic infarction.



One of the rare cause of acute abdominal pain is splenic infarction. It usually results from infiltrative hematologic disorders, Other conditions that can result is hypercoagulable states, infective endocarditis, cardioembolic events, and more rarely, infectious mononucleosis may be associated.

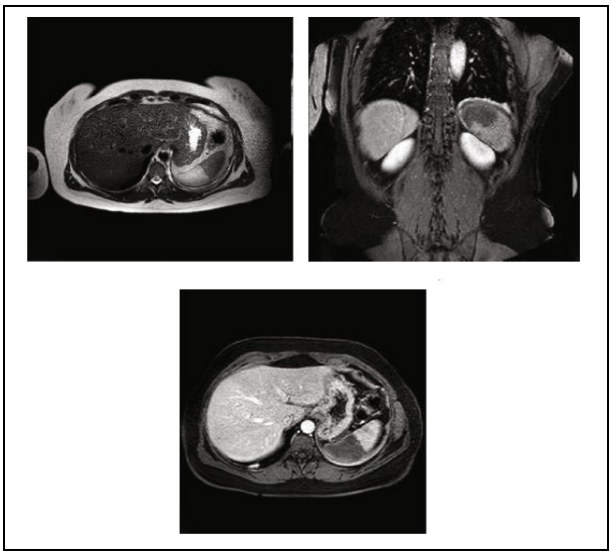
Patent Foramen Ovale (PFO) is present in about 25% of the population .

This case is a rare rare cause of abdominal pain due to splenic infarction in which the etiology is paradoxical embolic infarction due to patent foramen ovale.

Case presentation:

40-year-old woman presented with history of acute epigastric pain radiating to the back associated with nausea. No history of diarrhea, fever, or trauma. There was no response to analgesics. Medical history was unremarkable except class I obesity.

On admission, the patient was afebrile, with respiratory rate of 14/min, and blood pressure of 130/80mmHg and a pulse rate of 100 beats per minute. Cardiopulmonary system examination was normal.



A localized left-sided and epigastric tenderness was present and no peritonism. Bowel sounds were normal.

Electrocardiogram (ECG) showed sinus tachycardia . Laboratory tests showed WCC 9.4 × 109/L, Hb 15 g/L, and CRP 24 mg/L. Serum levels of electrolytes, bilirubin, alkaline phosphatase, amylase, and creatinine were normal.

Abdominal ultrasound did not show any abnormalities. Magnetic resonance imaging (MRI) of abdomen revealed a heterogeneous signal on a splenic topographic with low-intensity, and hypovascularized area with a cuneiform shape on its upper portion as shown in figure.

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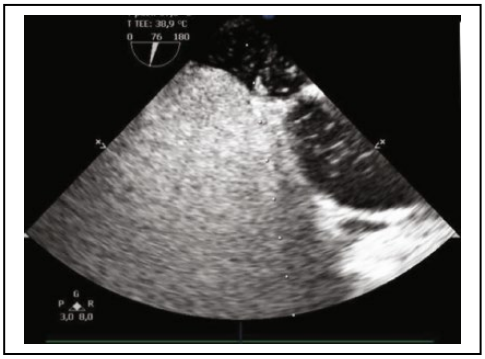

Patient was also tested for protein C, protein S, or antithrombin deficiency; hyperhomocysteinemia ; lupus anticoagulant and anticardiolipin antibodies; factor V Leiden mutation and prothrombin gene mutation.

Anticoagulation with enoxaparin (1mg per kilogram subcutaneous) was started, which provided a remarkable relief from the abdominal pain. Transthoracic echocardiogram was performed and revealed good biventricular function and no evidence of thrombus or valvular disease. patient was discharged asymptomatic with oral rivaroxaban prescribed.

On follow-up one week later, the patient was stable clinically. Computed tomography angiography of the abdomen did not reveal any atherosclerotic patterns.

Ambulatory monitoring with 24-hour Holter did not show paroxysmal atrial fibrillation or other significant supraventricular or ventricular arrhythmias.

Transesophageal echocardiogram (TEE) was done that revealed a patent foramen ovale with right-to-left shunt after agitated saline contrast injection during a Valsalva maneuver. Patient underwent percutaneous closure of the patent foramen ovale with insertion of a 23/25mm self-expandable PFO occluder. Device was inserted using the right femoral approach. The procedure was done with TEE guiding. Immediate angiography and echocardiographic result was excellent.

Rivaroxaban was stopped after the procedure. Aspirin 100 mg/d and clopidogrel 75 mg/d were prescribed for three months, after which aspirin was continued alone following implantation. Follow ups were uneventful.

Discussion:

Patent foramen ovale is associated with cryptogenic stroke. In specific subjects closure of PFO is considered to be better over medical management to avoid the embolic risk. Splenic infract is a rare condition difficult to diagnose. Thorough investigation in any suspected case is helpful in arriving at diagnosis for better management.

Conclusion: PFO can cause Paradoxical embolism which can cause of splenic infarction, if no other causative disorder is present and investigation for PFO and subsequent closure may be considered .

Reference:

1) Lamas ES et al. Patent Foramen Ovale Closure for Splenic Infarction: An Unusual Presentation and an Unusual Indication. Case Reports in Cardiology. 2020; 9802908: 1-4

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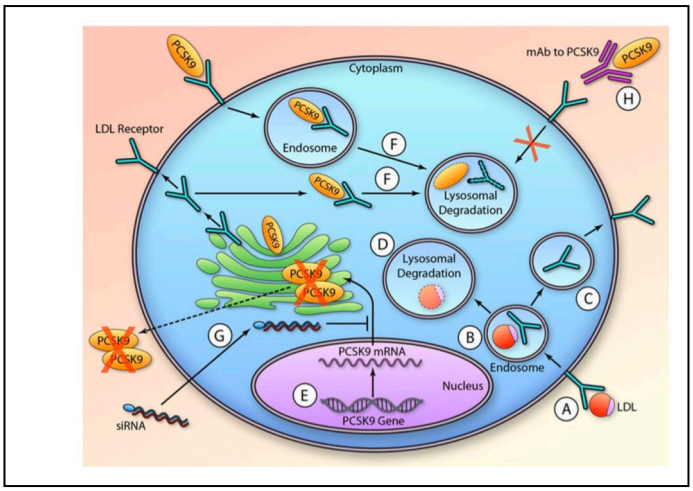
Significant reduction of LDL Cholesterol with twice yearly administration of a drug

Patients suffering from heterozygous familial hypercholesterolemia, who received the drug inclisiran had significantly lower levels of low-density lipoprotein (LDL) cholesterol than with placebo, with infrequent dosing regimen and an acceptable safety profile. This is the result of ORION -9,10,11 trials.

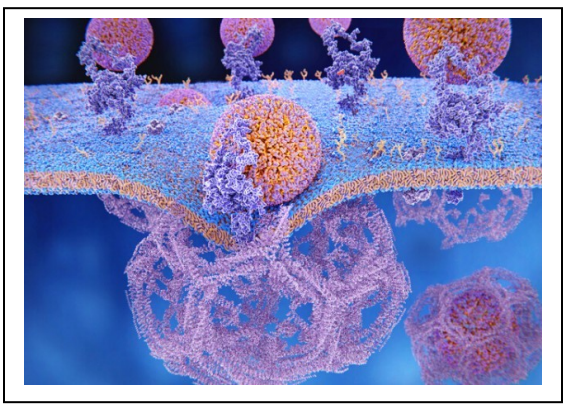
Inclisiran is a small interfering RNA (siRNA) therapy which is being studied to evaluate its ability to lower LDL cholesterol. Inclisiran prevents the production of proprotein convertase subtilisin/kexin type 9 (PCSK9) in liver,its primary source.

A robust reductions in LDL cholesterol levels were seen in all genotypes of familial hypercholesterolemia and adverse events were similar in the two groups of the study.



This drug is presented at American college of Cardiology , yet to receive approval from FDA.

Study was phase 3, double-blind trial, randomly assigned in a 1:1 ratio 480 adults who had heterozygous familial hypercholesterolemia received subcutaneous injections of inclisiran sodium (at a dose of 300 mg) or placebo on days one, 90, 270, and 450.



The primary end points were the percent change from baseline in the LDL cholesterol level on day 510 and the percent change from baseline in the LDL cholesterol level between day 90 and day 540.

Results on day 510, the percent change in the LDL cholesterol level was a reduction of 39.7 percent in the inclisiran group and an increase of 8.2 percent in the placebo group. A group difference of −47.9 percentage points (P<0.001). time -averaged percent change in the LDL cholesterol level between day 90 and day 540 was a reduction of 38.1 percent in the inclisiran group and an increase of 6.2 percent in the placebo group, group difference of −44.3 percentage points (95% CI, −48.5 to −40.1; P<0.001).

Reference:

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Availabe at : https://www.dicardiology.com/content/two-dose-year-ldl-lowering-drug-had-significant-impact-pooled-analysis-orion-trials. Accessed on 31-03-2020.