



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

-  ***Role of high-sensitivity C-reactive protein levels in acute coronary syndrome patients undergoing lipid-lowering therapy.***
-  ***Complications of Bacillus cereus Infective Endocarditis – A case report.***
-  ***A novel Ablation Monitoring technique.***

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,

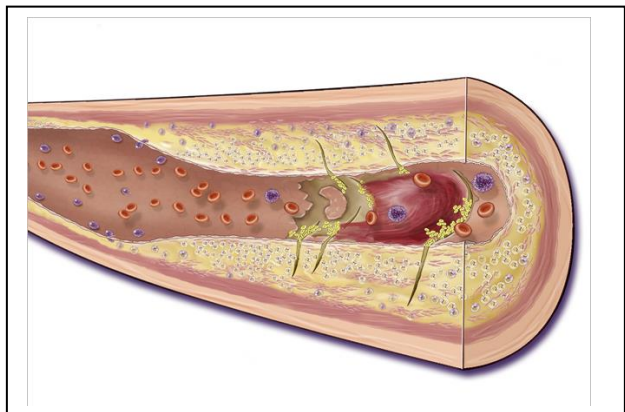
Medical Team, Micro Labs Limited

1. Role of high-sensitivity C-reactive protein levels in acute coronary syndrome patients undergoing lipid-lowering therapy.

C-reactive protein (CRP) levels are independent predictors of the short- and long-term outcomes of patients with acute myocardial infarction.

Several trials have shown that high-sensitivity (hs)-CRP levels not only predict the risk of adverse events but also may be an important marker for proper statin therapy in coronary heart disease.

Aim of the study was to assess the effects of hs-CRP levels on the prognosis of patients with ACS who underwent aggressive lipid-lowering therapy.¹





Methods:

It was a multicenter, prospective, randomized, open-label, blinded-endpoint trial.

Patients included were those hospitalized for ST-segment elevation myocardial infarction or for non-ST-segment elevation myocardial infarction or unstable angina within 72 h before randomization.

Patients were at least 20 years old, with ST-segment elevation myocardial infarction had electrocardiographic changes (persistent ST-segment elevation of 0.1 mV, new Q waves, or new left bundle-branch block) and elevated troponin or creatine phosphokinase-MB isozyme.

2000 ACS patients with dyslipidemia were included in the study. Patients were randomised into [pitavastatin + ezetimibe (10 mg/day), with a treatment goal of LDL-C levels <70 mg/dL or a conventional lipid-lowering therapy group [pitavastatin only] with a treatment goal of 90 mg/dL.

Patients were divided into hs-CRP quartiles after 3 months of treatment.

End points:

Composite of the first occurrence of the following: all-cause death, non-fatal myocardial infarction, non-fatal stroke, unstable angina, or revascularization with either PCI or coronary artery bypass grafting. The secondary endpoint was all-cause death.

Results:

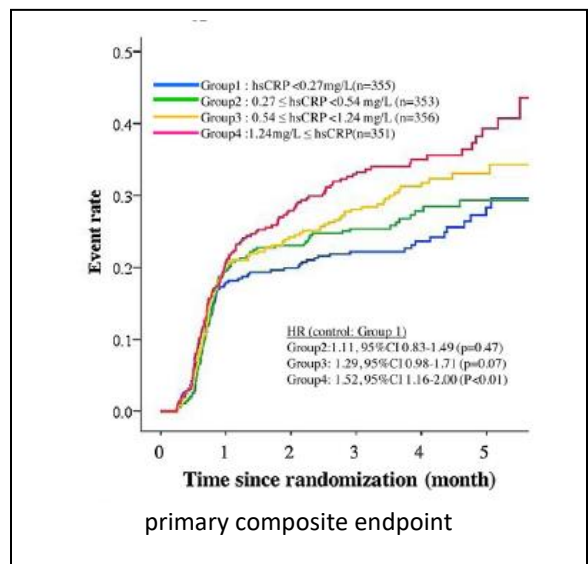
Patients were followed up for 3 years. Overall, 1500 patients were evaluated.

Over time no significant among-group differences were noted in low-density lipoprotein cholesterol (LDL-C) levels ($p = 0.44$).

Kaplan-Meier analyses revealed that the incidence of the primary and secondary endpoints was significantly higher in the highest hs-CRP group than in the other groups [hazard ratio (HR) = 1.52, 95% confidence interval (CI) = 1.16–2.00, $p < 0.01$; HR = 5.30, 95% CI = 2.47–11.32, $p < 0.01$, respectively].

Cut off hs-CRP level to predict all-cause death was 0.74 mg.

Multivariate analyses revealed that hs-CRP ≥ 0.74 mg/L at 3 months correlated with an increased risk of all-cause death (adjusted HR = 3.68, 95% CI = 2.22–6.10, $p < 0.01$).



Discussion:

An increase in the sustained systemic inflammatory response has been thought to promote the progression of multiple unstable plaques in the coronary arteries.



In current study , patients with ACS who underwent high-frequency PCI and concomitant aggressive lipid-lowering therapy, patients in the highest quartile hs-CRP subset showed worse clinical outcomes, regardless of the LDL-C value. patients in the highest hs-CRP level group at 3 months maintained significantly higher hs-CRP levels during the study period.

Also The cut-off hs-CRP value for all-cause death in patients with chronic-phase ACS was 0.74 mg/L, with a sensitivity of 68% and specificity of 62%.¹

Conclusion:

In Patients with ACS despite aggressive lipid-lowering therapy or LDL cholesterol levels, an elevated hs-CRP level was an independent predictor of a worse prognosis.

Reference:

1)Watanabe KE et al. Targeting high-sensitivity C-reactive protein levels in acute coronary syndrome patients undergoing contemporary lipid-lowering therapy: a sub-analysis of the HIJ-PROPER trial. J Cardiol. 2020;75(5):500-506.

2. Complications of Bacillus cereus Infective Endocarditis – A case report.

Infective endocarditis (IE) due to *Bacillus cereus* in native valve occurs extremely rarely. it is most commonly seen in intravenous drug abusers and other risk factors as immunosuppression, malignancy, and valvular heart disease including prosthetic heart valves.

Current is a case presentation of complications of *B. Cereus* infective endocarditis.¹

Case presentation:

A 60-year-oldmale presented with intermittent fever of low-grade and painless hematuria of one-month duration.

He had a significant weight loss of 6 kg in the period. He was on long-term medication for diabetes mellitus without any micro- or macrovascular complications, and his glycemic control was satisfactory with oral hypoglycemic drugs.

As a profession, He was a school principal and not an alcoholic or smoker and denied usage of any recreational drugs.

On 11th day of hospital admission, he developed three episodes of left-sided focal seizures without loss of consciousness, and each episode lasted for about two minutes.

On examination, he was afebrile, has thin built with body mass index (BMI) of 19.3 kg/m², and severely pale with finger clubbing. No other peripheral stigmata of infective endocarditis or lymphadenopathy was identified.



Pulse rate was irregularly irregular with a rate of 70 beats per minute and a pansystolic murmur best heard at the apex which radiated to the axilla; apart from that, other examinations were unremarkable.

Electrocardiography (ECG) showed multiple ventricular extra systoles without atrial fibrillation.

Transthoracic echocardiography demonstrated mitral regurgitation with tiny vegetation attached to the anterior mitral leaflet which was $0.7 \times 0.3 \text{ cm}^2$ in size.

Magnetic resonance imaging (MRI) of the brain revealed multiple foci of hemorrhage in the bilateral cerebral hemispheres and cerebellum that are suggestive of cerebral vasculitis.

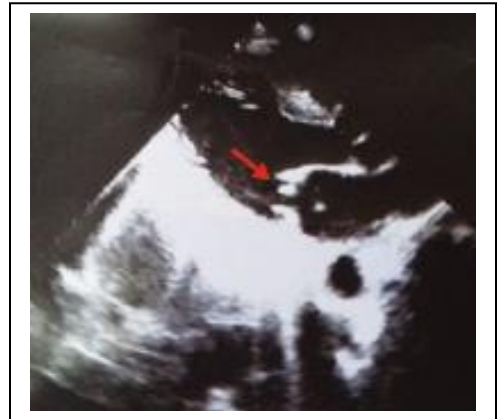
No space-occupying lesions or cerebral abscess. Eye screening was negative for vasculitis or endophthalmitis.

Contrast enhanced computed tomography (CECT) of the chest and abdomen showed two splenic abscesses on the parenchyma and the lateral wall.

Patient developed oliguria with progressively rising creatinine and had to undergo hemodialysis twice with blood transfusions.

Renal biopsy performed showed focal segmental glomerulosclerosis (FSGS) with acute and chronic tubular interstitial nephritis. No immunosuppressive therapy was used for rapidly progressive renal failure, but the patient recovered with antibiotic therapy.

Intravenous (IV) ciprofloxacin was administered for 8 weeks which was sensitive for *Bacillus cereus* that has been identified by an automated identification and susceptibility testing. He had a protracted and prolonged hospital stay for about two months. Eventually patient had complete recovery. Patient did not have relapses for two years of clinic follow-up.



Discussion:

Bacillus cereus is a facultative anaerobe found in the environment and certain types of food. It can also be found in the gut flora. *Bacillus cereus* causing IE commonly affects males with the age group of 41–60 years.

Mitral valve is more frequently affected among the valves followed by aortic and tricuspid (common in IVDA) valves. *B. cereus* is commonly sensitive to aminoglycosides, vancomycin, ciprofloxacin, linezolid, or clindamycin.¹

Conclusion:

Bacillus cereus can atypically present as infective endocarditis infection with multiple complications.

Reference:

1)Nallarajah J et al. Case Report *Bacillus cereus* Subacute Native Valve Infective Endocarditis and Its

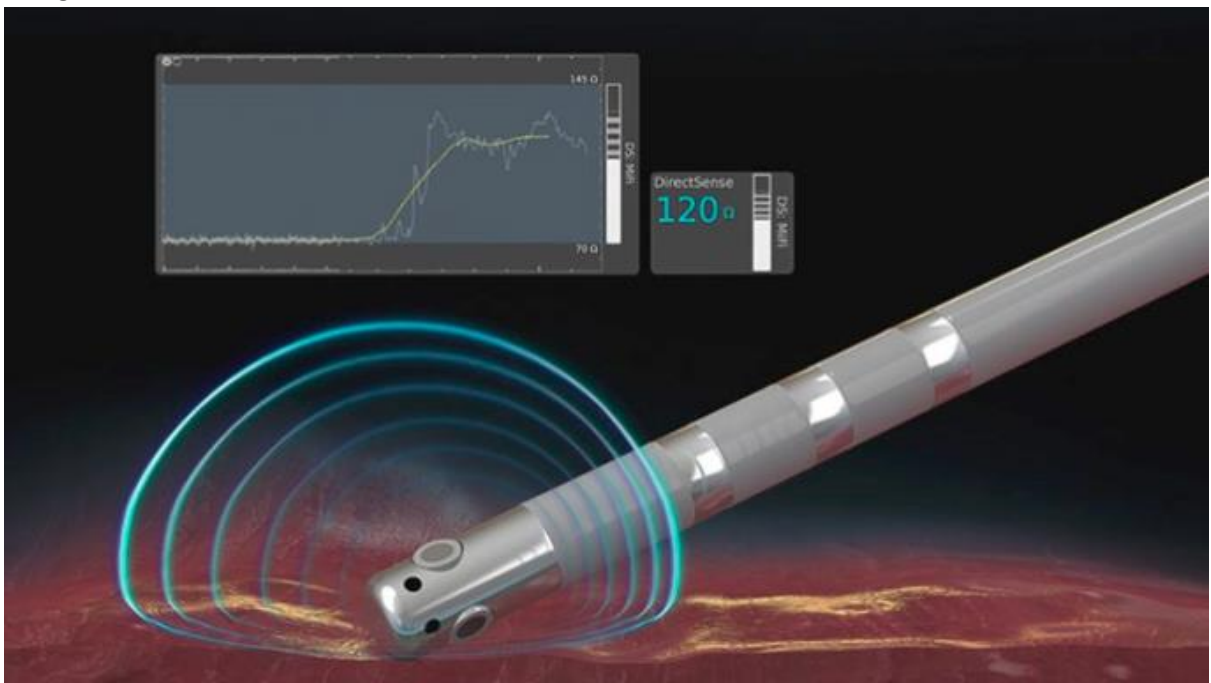


Multiple Complications. Case Reports in Cardiology. 2020; 8826956: 1- 4 pages.



3. A novel Ablation Monitoring technique.

A novel Technology is released for live monitoring of cardiac tissue during radiofrequency ablation procedures. It is designed for use of Mapping System along with the Open-Irrigated ablation catheter and it works by measuring the change in electrical impedance of the tissue around the catheter as it is being irradiated.



It is currently difficult to create lesions that alleviate cardiac arrhythmias along with minimizing unnecessary damage to surrounding tissues.

An analysis is based on patient anatomy combined with previously acquired knowledge and experience in similar procedures.

There is insufficient ablation or overablation, which either don't resolve the cause of an arrhythmia or

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cause additional side effects.

With the change in impedance around the tip of the catheter provides unique information about local tissue characteristics and the development of the lesion.

This Technology assists physicians in evaluating pre-ablation tissue health, while supporting better clinical understanding of how they are influencing the tissue to guide minimal, predictable ablation during a procedure.

Reference:

Available at : <https://www.medgadget.com/2020/06/boston-scis-directsense-ablation-monitoring-tech-coming-to-u-s.html>. Accessed on 25-06-2020.



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