

Why We Must Manage Lipids To Prevent Heart Attacks

The recently-released lipid guidelines, customised to the Indian population, will help create a uniformity of treatment across the country

India has the unfortunate distinction of having the highest number of coronary artery disease (CAD) patients in the world. A recent study published by the Cardiological Society of India says dyslipidaemia – a condition where there is an abnormally large amount of cholesterol or lipids (fat) in the blood – is the biggest risk for CAD in the country. According to studies, about 217 million cases of dyslipidaemia are reported in India. Real-world evidence shows that about 80% patients in India do not achieve their target low-density lipoprotein cholesterol (LDL-C) goals even one year after a cardiovascular (CV) event. Unfortunately, we don't have standardised treatment protocols or guidelines to manage dyslipidaemia in India. Now, faced with medical evidence of patients not being able to meet their target LDL-C goals, the Cardiological Society of India (CSI) understands the urgency – and the imperative – to develop India-specific lipid guidelines.



Lipid alert

In December 2023, the CSI published a comprehensive set of lipid management guidelines. A panel of 22 doctors worked on this 114-page document – titled CSI clinical practice guidelines for dyslipidemia management – for four years, taking into consideration data and conditions that are entirely India-specific. The focus is on dyslipidaemias most prevalent in our country, such as elevated levels of LDL-C, known as the 'bad' cholesterol; lower levels of high-density lipoprotein cholesterol (HDL-C) or 'good' cholesterol; apolipoproteins, triglycerides and lipoprotein(a).

Cardiologists are particularly concerned about LDL cholesterol, which poses the greatest risk for heart attacks, but does not manifest any symptoms when the levels go up, even dangerously. "In our general, low risk population, we have decided to keep the target LDL-C goal at below 100," says Dr JPS Sawhney, senior consultant

cardiologist and chairman of cardiology at Sir Gangaram Hospital in New Delhi, who leads the study. "With patients who have hypertension, diabetes and are generally more at risk, the LDL-C goal is below 70. And for people in the extremely high risk group – those who have suffered cardiac episodes and have high LDL-C – the desired level is no more than 40."

Dr Sawhney adds: "International guidelines say you should repeat the lipid profile test about four to six weeks after starting a patient on lipid-lowering therapies. But our study found that the maximum effect of the drug comes at about four weeks and there is no further reduction after that. So we decided to hit hard, and hit early, by reducing the LDL-C

goal to 55 as soon as possible through targeted treatment. We found that we were able to reach this goal within three months with a majority of the patients."

The guidelines aim to reach every practising physician, even in the remotest, most rural parts

of India. "Indians experience cardiovascular diseases (CVD) 10 years before those in the West," says Dr Sawhney. "About 50% of Indians get heart attacks at less than 50 years, and 20% get them at under 40, and these figures are also three times higher than the rest of the world." And yet, when it comes to LDL-C, doctors and patients sometimes don't understand the seriousness of the risks. This goes back to the problem of elevated levels of LDL-C not exhibiting any symptoms. Since this can only be detected through tests, it's easy for patients (and in some cases doctors too) to miss it.

Adherence to therapy in chronic disorders is a critical aspect that is often neglected by patients, and not emphasised enough by doctors in their conversations with patients. Since they cannot 'feel' the effects of elevated levels of LDL-C – or if they have survived a cardiac event – many patients stop taking their medicines,



thinking they no longer need it. Or if they are being treated for comorbid conditions, they may forget to take their heart medication. The outcome of both these scenarios is dangerous: it not only increases patients' risk of cardiovascular events, but also affects their quality of life. "Many times the dosage is reduced by the physician with no proper information," says Dr Sawhney. "Without the knowledge of guidelines, they make mistakes in their clinical estimates, which is why a standardised line of treatment is necessary."

Specific risks

India has specific risk factors, which is why it needs customised guidelines. Tobacco use, which includes smoking bidis and chewing tobacco; sedentary lifestyles; high-carbohydrate diets and extensive use of oil in cooking that cause central obesity (a build-up of fat around the midriff) – all of these lead to lipid abnormalities such as high LDL-C, high triglycerides and low HDL-C.

There is also a high prevalence of sugar, cholesterol and blood pressure among the population in India, which is known to be the diabetes capital of the world. Then there are genetic factors such as Familial Hypercholesterolemia (FH), a hereditary condition that increases the risk of heart disease

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at a younger age than usual. Another factor is Lipoprotein (a) that affects about 25% of the population in India, compared to 15-20% in the West. "These abnormalities, found in much higher numbers in our country than anywhere else, lead to an early onset of heart disease," adds Dr Sawhney.

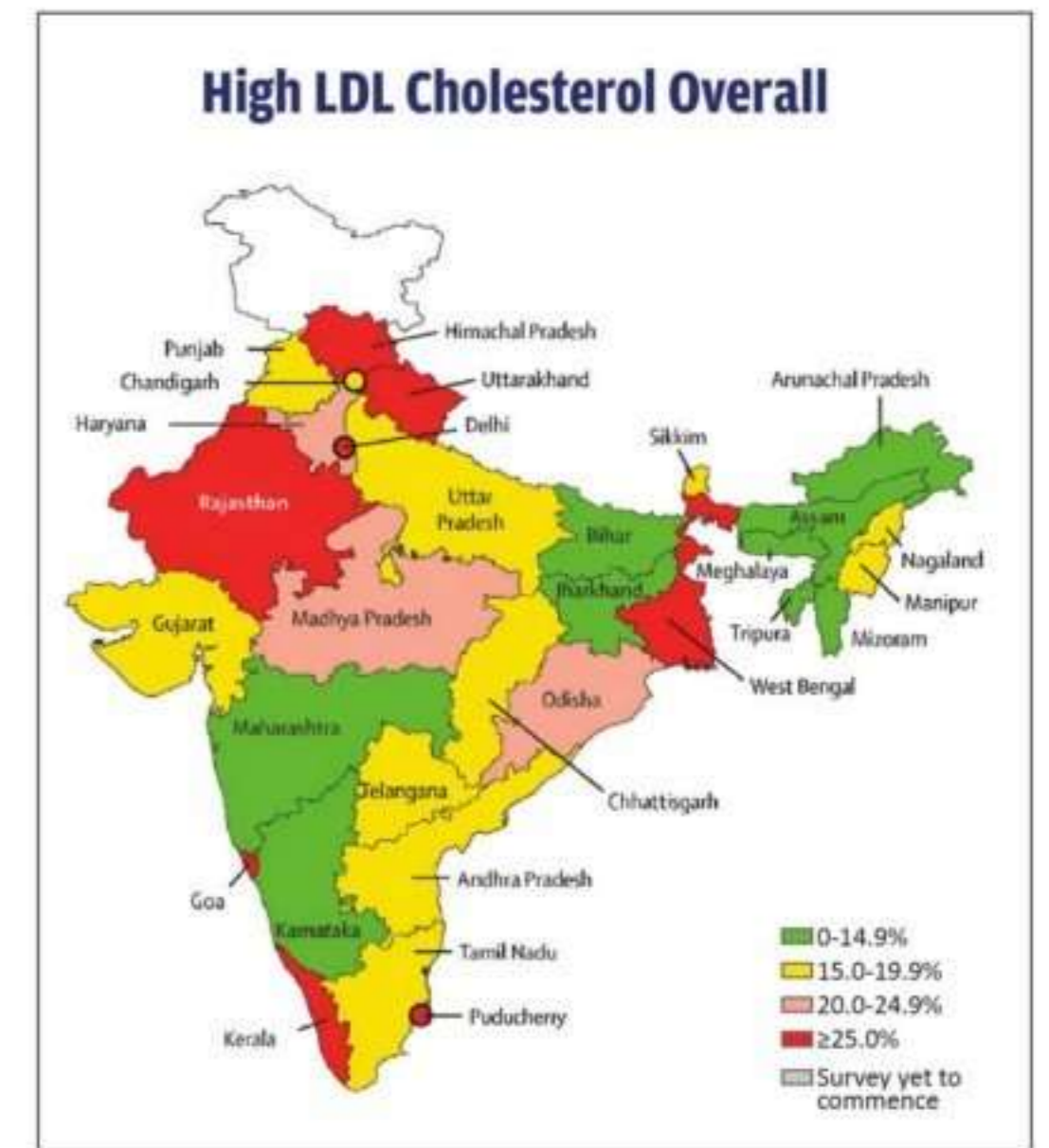
According to Dr Saumitra Ray, consultant interventional cardiologist and Director, invasive cardiology at AMRI hospital in Kolkata, risks in India are 50% genetic and 50% due to modifiable factors. "Our Southeast

Asian population is genetically pre-disposed to a high degree of atherosclerosis and pulmonary artery disease, which is extensive and also comes on an earlier age. We have narrower arteries, which we can't help. So the onus is on us to work on the modifiable risk factors like changes in lifestyle, diet etc," Dr Ray says.

The guidelines are, however, only a guidance for physicians. The final call – on line of treatment and drug protocols – lies entirely with the treating doctor, since each case may be

different. For instance, there is a lot of regional variation in the prevalence of LDL-C, HDL-C and triglycerides across the country [see map], along with rural-urban differences. In the past, this has made it tough to have a standardised line of treatment.

"Our ignorance about the severity of the problem is an issue," adds Dr Ray. "Even doctors don't realise how rampant dyslipidaemia is in India, and it is still considered a disease of the rich and elite, which is not true." The treating physician having the final say could also create difficulties. "For these guidelines to be effective, we need to reach them to physicians in the most rural or backward areas of the country,



Source: CSI clinical practice guidelines for dyslipidemia management: Executive summary by Jitendra PS Sawhney, Sivasubramanian Ramakrishnan et al. Indian Heart Journal

working in the last mile," says Dr Jayagopal PB, Director and head of the department of cardiology at Lakshmi Hospital in Palakkad, Kerala. "But even today, many small towns don't have qualified doctors." So the assumption that any general physician will have thorough knowledge of LDL-C, and treat patients accordingly, is a stretch.

Information For All

The guidelines hope to close this knowledge gap by keeping general physicians operating in smaller centres abreast of the latest developments in CVDs, for favourable treatment outcomes for patients. They will also provide a framework around which individual physicians can build their treatment protocols, and create a uniformity in treatment across the country.

So what do the guidelines mean for patients? "Many times in India, people are not aware of what is the correct treatment," says Dr S Ramakrishnan, professor of cardiology at AIIMS, New Delhi. "With these guidelines, patients will know exactly what treatment they require." He further adds: "In India, our rates of mortality with heart attacks are high, while our post-heart attack secondary rate of prevention is poor because people stop taking medication after one or two years of having experienced a CVD event, thinking they are fine." Although these are broad guidelines, they will help physicians to individualise treatment, and patients can also see what they are being prescribed [the guidelines include details about both preventive and secondary medication and lipid-lowering therapies].

But most important – the guidelines will make both physicians and patients aware

that the target LDL-C goals for each person are different, as are individual risks. For instance, a 30-year-old with an LDL-C level of 130 is at less risk than a 60-year-old man who has diabetes, but has an LDL-C level of 100. In fact, cardiologists say that the reference range quoted by pathology labs in reports can be both confusing and misleading because they are very general. So the same 60-year-old with diabetes and an LDL-C of 100, needs to be on medication. Chances are his lab report will quote the ideal range for LDL-C as 130-200. "Seeing this, the patient may feel that he is safe, but he is not," adds Dr Ramakrishnan. "He needs to start on medication right away."

So, as per the new guidelines, patient treatment will not be based on one general number/LDL-C goal; it will be different for different categories of people, based on their risk. There will be a normal reference range for the general population, but an entirely different one for those who have suffered heart attacks, stroke or ASCVD (atherosclerotic cardiovascular disorder). Such targeted treatment will also help patients reach their LDL-C goals faster, says Dr Ramakrishnan.

"Proper management of dyslipidaemia is crucial to control the epidemic of premature CAD in India," says the CSI report. "[We have] strived to develop consensus-based guidelines for better lipid management for CAD prevention and treatment...There is an urgent need for standardization of lipid estimation in medical laboratories across the country so that every eligible individual can receive evidence-based lipid lowering interventions." Good news indeed, for both patients and their doctors.

Standard lipid testing panels and targets for various risk groups (all values in mg/dl)

Lipid Parameter ^a	Desirable Levels Of Various Lipid Fractions			
	Low Risk	Moderate Risk	High Risk	Very High Risk
LDL Cholesterol ^b	<100	<100	<70	<55
Non-HDL Cholesterol	<130	<130	<100	<85
HDL Cholesterol	>40 M >50 W	>40 M >50 W	>40 M >50 W	>40 M >50 W
Triglycerides	<150	<150	<150	<150
Lipoprotein(a)	<50	<50	<50	<50

^a The values may vary according to the laboratory-method used. ^b Direct or calculated according to Friedewald formula; Extremely high-risk group has not been included in this table.