Acquired Hyper High-Density Lipoproteinemia

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Abstract
A case of Acquired Hyper High-Density Lipoproteinemia is presented. The regular use of sesame oil for cooking is perceived to be the reason for this effect. Hyper High-Density Lipoproteinemia is a very rare condition.

Case report
In March 2003, a seventy year old lady with Coronary Artery Disease, treated at a different centre during the year 2002 came to this centre for treatment. She did not have any complaints. Physical examination did not show any positive finding. Investigations - Lipid profile: Total Cholesterol - 198 mg%, HDL - 60 mg%, LDL - 65 mg%, Serum triglyceride - 110 mg%, VLDL - 24 mg%. Haemogram including serum protein, serum bilirubin, serum alkaline phosphatase, SGPT, serum uric acid, Thyroid function test and Urine analysis were within normal limits. Electrocardiogram was normal. Treadmill test was negative for inducible ischaemia. Treatment - she was advised to continue Amlodipine 5 mg daily, Aspirin 75 mg daily and Atorvastatin 10 mg daily which she was taking regularly.

Periodic check-up showed that her serum HDL level started rising and within one year it reached 115 mg%. From the year 2004 her HDL level was in between 105 mg% and 115 mg% and she became stable.

Discussion
This case appears to be a case of Acquired Hyper High-Density Lipoproteinemia because her serum HDL was within normal limits initially. The patient, a widow was staying alone and her relatives staying at far off places did not use sesame oil.

The beginning of the rise of her serum HDL level coincides with the beginning of her consuming sesame oil in the year 2003. Hence one is justified to assume that the regular consumption of the sesame oil is the cause of the abnormal rise in serum HDL level. There is no report to substantiate it.

Sesame oil is extracted from sesame (Sesamum Indicum L) seeds. It is a rich source of antioxidants, linoleic acid, vitamin E, A, B1, B2, minerals including calcium, phosphorous and iron. It contains 13% of saturated fatty acid, 41% of mono unsaturated fatty acid, 45% of polyunsaturated fatty acid and 1% of omega 3 poly unsaturated fatty acid. It is reported that regular consumption of sesame oil can lead to drop in serum cholesterol and reduction in blood clots. The antioxidants in sesame oil namely sesaminol and sesamolinol protect fat from being oxidized. Sesaminol maintains the serum LDL level in an unoxidised state¹. It is felt that sesaminol and sesamolinol cause the abnormal rise in HDL level. This postulation needs further studies.

HDL particulars are thought to participate in

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References:
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4. Ornam and coworkers report that APO A-I and A-II interact with this receptor. This receptor mediated reverse transport could explain why patients with elevated serum triglyceride and reduced catabolism exhibit normal HDL catabolism of Apo A-I and Apo A-II. Decreased HDL catabolism was reported in patients treated with a CETP inhibitor. There is another condition and human arterial smooth muscles. J. Clin. Invest 1983; 72: 1714-1721.
the reverse transport of free cholesterol from peripheral tissues by HDL receptor. Ornam and coworkers reported that APO A-I and A-II interact with this receptor. This receptor mediated reverse transport could explain why patients with elevated HDL are less prone to coronary Artery Disease. There is a genetic condition associated with markedly high plasma levels of High-Density Lipoprotein (plasma HDL Cholesterol levels >100mg/dl). These patients have Cholesterol Ester Transfer Protein deficiency. This is due to decreased HDL catabolism in patients treated with a CETP inhibitor. There is another condition called Familial alphalipoproteinemia. A single unique kindred has been identified with markedly increased HDL and Apo A-I but normal Apo A-II levels. This proband was healthy and the kindred was consistent with longevity; however the number of kindred members was too small to make a definite conclusion. The markedly increased HDL in this proband was due to selective increase in synthesis of Apo A-I with normal Apo A-II production. There is a report that Hyper High-Density Lipoproteinemia potentiated by prednisolone therapy is associated with Nephrotic Syndrome. Alpha - adrenergic blockers such as prazosin may raise serum HDL level. Oestrogen tends to raise serum HDL while reducing serum LDL level. Patients with Hepatic Lipase deficiency may also have increased serum HDL level and decreased catabolism.

Conclusion

This case illustrates a progressive and marked rise in serum HDL - Cholesterol levels in an elderly lady from baseline levels over a period of a year with a possibility of sesame oil contributing to this phenomenon. Further studies are needed to assess the biochemical effects of sesame oil on lipid metabolism.

References:


