

Hypocholesterolemia in Sick Cell Anemia: What is the Reason behind it?

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Editorial

Sickle cell anemia (SCA) is in fact a hemoglobinopathy complicated with vasoocclusion, inflammation and organ pathology. Hypocholesterolemia is a common laboratory finding in the plasma of SCA patients [1-4]. Till now the underlying pathology of this hypocholesterolemia has not been clarified in addition to the uncertainty of its clinical consequences.

There are some possibilities to explain the hypocholesterolemia of SCA patients. First comes the hemolytic stress where chronic hemolysis and increased erythropoietic activity are important in the consumption of plasma pool of cholesterol and development of hypocholesterolemia in SCA patients [5]. Oxidative stress can be another reason for hypocholesterolemia in SCA. In a recent study of our group a significant negative correlation was found between plasma cholesterol and hemolysate MDA levels of steady state SCA patients [6]. This data may indicate a decrease of either erythrocyte or plasma lipoprotein cholesterol perhaps due to a hypermetabolic state in response to oxidative stress.

Inflammatory stress is another character of SCA where chronic vasoocclusion results with a stimulation of inflammation [7]. Inflammation may possibly alter lipid balance that may result with hypocholesterolemia.

Although there are various reasons that may cause hypocholesterolemia, the clinical consequences of this laboratory finding have not been well established. Hypocholesterolemia is associated with

depression and decreased immunity especially in elderly. Therefore, we are, as researchers, responsible to find the underlying metabolic events in this hypocholesterolemia and to determine the clinical correlations of hypocholesterolemia in SCA patients.

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Received March 03, 2012; Accepted March 09, 2012; Published March 12, 2012

Citation: Er Oztas Y (2012) Hypocholesterolemia in Sick Cell Anemia: What is the Reason behind it? *Biochem & Pharmacol* 1:e110. doi:[10.4172/2167-0501.1000e110](https://doi.org/10.4172/2167-0501.1000e110)

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