Turning blood red

The fight for life in Cooley’s anemia

Arthur Bank


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β-Thalassemia (also known as Cooley’s anemia or Mediterranean anemia) is an inherited autosomal anemia resulting from genetic mutations that reduce the rate of synthesis of β-globin chains of hemoglobin, the oxygen-carrying protein in red blood cells. This anemia, if untreated, can result in heart failure, hepatosplenomegaly, and adverse skeletal changes. Periodic blood transfusions over the patient’s lifetime usually result in fatal iron overload. Interestingly, and for reasons that still remain elusive, β-thalassemia provides partial protection against infection with certain species of Plasmodium parasites—the mosquito-borne agents that cause malaria. The disease is particularly prevalent among Mediterranean, African, and Southeast Asian populations that evolved in regions where malaria was and may remain endemic.

In the late 19th and early 20th centuries, New York City received thousands of immigrants from southern Italy and Greece. They brought with them their remarkable, musical, stone-crafting, and horticultural skills together with the mosquito-borne agents that cause malaria. The disease is particularly prevalent among Mediterranean, African, and Southeast Asian populations that evolved in regions where malaria was and may remain endemic.

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