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First Observation of Hemoglobin J Paris I [Alpha-2-12(A10)Alanine-Aspartic Acid Beta-2] in the Indian Subcontinent

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Hb J Paris I or $\alpha^{212}(\text{A10})$ alanine-aspartic acid β^2 , a fast moving human hemoglobin variant, was first described in a woman of Spanish origin living in Paris [1]. Subsequently it was observed in Portugal [2], Iran [3], Yugoslavia [4] and in an Italian family [5].

We have recently discovered this hemoglobin in a 26-year-old healthy laboratory worker of North Indian (Punjabi Hindu) origin. He was a healthy person with normal hemogram. No inclusion bodies were found in the red cells incubated with new methylene blue. Heat test was normal.

Hb electrophoresis performed on starch-agarose gel with Tris-EDTA-borate buffer at pH 8.6 showed a hemoglobin fraction with a faster mobility than Hb A and a second Hb A₂ band along with the normal Hb A and Hb A₂ band. On quantitation, the major abnormal Hb fraction was 26.4% of the total hemoglobin. This abnormal fraction could not be separated from Hb A on acid agar gel electrophoresis. Globin treated with 8 M urea and mercaptoethanol showed an anomalous alpha chain which moved slower than the normal, both on cellulose acetate and in CM cellulose-52.

Structural analysis of the abnormal hemoglobin was carried out at the Department of Cell and Molecular Biology, Medical College of Georgia, USA. It showed a substitution of the alpha chain at position 12, where the alanine residue had been substituted by an aspartic acid residue. This substitution corresponds to the Hb J Paris I described by Rosa et al. [1].

Out of the nine families previously described with this abnormal hemoglobin variant [1–5], six families showed direct or indirect evidence of an Arabic origin. Our subject is a native of Punjab (India) and to the best of his knowledge comes from a genuinely Punjabi family without admixture of any other populations.

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