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## Evaluating the role of indirect bilirubin and urobilinogen as an alternative screening tool for beta thalassemia minor

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**Background & Objectives:** Beta thalassemia continues to be significant burden to Western India particularly Saurashtra region of Gujarat. The cost of ideal treatment of 1 Thalassemia major child is nearly Rs 1Lakh/annum. So emphasis must be shifted from treatment to prevention that includes mass screening. Most of these tests have limited availability and require sophisticated equipments. Thus, there is need for simple, low cost and reliable test. The present study will evaluate validity of such test Indirect Bilirubin and Urine Urobilinogen.

**Methods:** The present cross-sectional study was conducted on 100 subjects in PDU Medical College Rajkot, Gujarat over period of two months. In first group, 50 Beta Thalassemia minor patients were selected while in second group 50 normal individuals from hospital staff were selected. Complete-haemogram, serum-direct, indirect and total bilirubin, urine urobilinogen and HbA2 levels by electrophoresis were done and results analyzed.

**Results:** Of the 50 cases in first group, 41 had higher indirect bilirubin levels (>0.7 mg/dl), 35 had high urine urobilinogen level (>1 mg/dl), 49 had lower (<1530) Shine & Lal index while all 50 had HbA2 level >3.5%. In second group, 3 had high bilirubin levels, 4 had high urobilinogen levels, only 2 had low (<1530) Shine & Lal-index while no one had HbA2 level >3.5%. Indirect-bilirubin showed a sensitivity of 82%, specificity of 94%. Urobilinogen showed sensitivity of 70% & specificity of 92%. Shine & Lal index showed sensitivity of 98% & specificity of 96%. Combined sensitivity & specificity of bilirubin & urobilinogen was found to be 94% & 98% respectively.

**Interpretation & Conclusion:** Thus, serum-indirect-bilirubin and urine-urobilinogen is a valuable, cost-effective screening test with sensitivity & specificity comparable to RBC indices and so may be used in rural settings that are devoid of automated-cell-counters.

## Biography

Ridham Khanderia is currently pursuing MBBS from Pandit Deendayal Upadhyay Medical College, India. He has done a research project on this paper under ICMR-STS (Indian Council of Medical Research–Short term studentship) program which is under a review process in the reputed journal (*Indian Journal of Medical Research*). He has been selected as an Elsevier Student Ambassador-2014. He has been Vice-President of College Alumni Association for the year 2012-13 and also given oral presentation on this paper in "MEDICON" research conference in India.

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