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Thalassemia and Glucose-6-phosphate-dehydrogenase (G6PD) Deficiency in Southeast Asian Immigrants

Elaine S.K. Choi, MD, Feng S. Yu, Nadine Wu, Roslinda J. Ott, and Philip R. Daoust, South Cove Health Center, New England Medical Center, Tufts University, School of Medicine, Boston, MA

Abstract

In 1977, microcytosis was noted in over 10% of complete blood counts (CBC) at the South Cove Community Health Center (SCCHC) in Boston Chinatown. A pilot study of thalassemia was conducted which evolved into a formal southeast Asian genetic screening program supported by SPRANS funding from the Maternal and Child Health Bureau. Diagnostic tests included hemoglobin (Hgb) electrophoresis, Hgb A2 and Hgb F quantitation, Hgb H preparation, reticulocyte count and maturity index, zinc protoporphyrin and ferritin assays. Pediatric, premarital and prenatal patients and spouses were targeted for screening, health education and counseling.

From 1977 to 1994, the CBCs of 11,940 patients at SCCHC were screened and 13.7% showed microcytosis. Eighty seven percent of the patients screened were southeastern Chinese and 12% were other southeast Asians. Based on diagnostic studies on the microcytic patients, the prevalence of alpha thalassemia was found to be 6.9%, beta thalassemis 4.4%, Hgb E trait 0.5%, and simple iron deficiency anemia 1.3%.

In 1993, the program was expanded to include screening for G6PD deficiency. Over an 8-month period, 242 males and 256 females were tested by a quantitative G6PDH assay (Sigma). Deficient levels were noted in 20 (8%) males and 23 (9%) females from 25 families. G6PD deficiency coexisted with thalassemia in 8 families and with Hgb E in one family.

This report is presented to document the prevalence of the thalassemia syndrome and G6PD deficiency in the growing population of southeast Asian immigrants, who are in need of clinical recognition as well as culturally-sensitive educational and counseling services.