SUMMARY

β-thalassemias are a group of hereditary blood disorders characterized by anomalies in the synthesis of the beta chains of hemoglobin resulting in variable phenotypes ranging from severe anemia to clinically asymptomatic states.

The aim of this study was to evaluate the prevalence of some encapsulated bacteria carriers in children suffering from β-thalassemia major as well as the role of splenectomy, vaccinations, and regular prophylactic antibiotics in the prevalence of encapsulated bacterial carriage in these patients.

This case-control study included 200 children aged 2.6-18 years, 100 healthy control children and 100 children with β-thalassemia major diagnosed and followed up regularly in the Pediatric Clinic of Benha University Hospital and the Insurance Clinic in El-Mansoura over 12 months' duration from the beginning of August 2009 to the end of July 2010.

All the children were subjected to medical history taking, clinical examination and pharyngeal swabbing to detect encapsulated bacteria (Strept. pneumoniae, H. influenza type b, N. meningitidis and β-hemolytic streptococci).

In general, our results declared that the prevalences of carriage of Strept. pneumoniae, β-hemolytic Streptococci and Neisseria meningitidis in our thalassemic patients were lower than those of the controls. This could be attributed to the immunological defects which make them manifest as

disease once the patient infected. Also, periodic follow up makes these patients under high medical care with decreasing chance for being carriers. H. influenza b carriage was not detected in any of our patients or control children. This may be because the mean ages of them were 10.37 and 10.8 years respectively, and the timing of obtaining samples was mostly in warm or hot seasons.

All our splenectomised patients received anti-pneumococcal, anti-Haemopilus influenza and anti- Neisseria meningitidis vaccines. We found that among our children (patients & controls), the incidences of both Streptococcal pneumoniae & β-hemolytic streptococcal carriers are significantly highest in those splenectomised but receiving irregular or no antibiotic prophylaxis.

The high prevalence of carriers of Strept. pneumoniae observed in our splenectomised vaccinated patients may be due to lacking the booster doses of the vaccine, as this group requires revaccination every 3-5 years.

The high prevalence of carriers of β-hemolytic streptococci observed in our splenectomised patients receiving irregular or no antibiotic prophylaxis may be due to inadequate treatment and changing in bacterial characteristics which lead to bacterial resistance to antibiotics. This results in unsuccessful treatment and increased carrier states.

Among our healthy controls, Pneumococcal and β-hemolytic Streptococcal carriages had statistically significant female predilection. This may be because in our society, parents commonly give more care to their sons.