10 years and so it is usually given at birth to decrease this risk of mortality on infants and young children. Considering that the transfer of cellular immunity from the mother to the offspring’s is not PPD specific, and as TB is a disease of mainly adolescents and the most common age group affected is teenagers, in order to decrease the morbidity, mortality and disability of the disease we recommend giving a booster dose of BCG at the entry of the student of the secondary school (12 years of age) for 3 reasons: 1. To overcome the failure or the non-response to the first dose and so to complete the defected coverage. 2. To guarantee another 10 years safe period against the disease until the vaccinee has passed the high-risk (adolescence) period. 3. To achieve a good cost-benefit ratio knowing that the full course of treatment of TB costs about $50/patient while the BCG vaccine costs only $0.1/dose.

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References

Salmonella septicemia resistant to 3rd generation cephalosporins in a child with sickle crisis.

Sir,

Sickle cell anemia is an autosomal recessive disorder of hemoglobin, in which the predominant hemoglobin is HbS. Deoxygenated sickle hemoglobin polymerizes into long fibres and causes sickling of red cells. These sickle red cells block different areas of microcirculation, which results in several manifestations of the disease, along with anemia due to decreased red cell survival. We report a case of sickle cell disease who presented with painful crisis in the back, and later developed salmonella septicemia during his hospital stay. The organism was resistant to 3rd generation cephalosporins and sensitive only to Amikacin and Ciprofloxacin. An 8 year old boy, weight 20 kg, suffering from sickle cell disease (SCD) reported to Pediatric out-patients with backache of one day duration. On examination, he was afebrile. Spleen was palpable 4 cm below the left costal margin. There was tenderness in the lower back in the midline. All other clinical findings were normal. His complete blood counts revealed a Hb of 7.2 g/dl; total leucocyte count of 16.4 x 10^9/l with 61% neutrophils; platelet count: 244 x 10^9/l and a reticulocyte count of 5%. His was transfused with 200 ml of compatible red cell concentrate on the 2nd day of his admission, which was uneventful. On the 3rd day of hospital admission, the patient developed fever with rigors. The fever remained continuous. Possibilities of a transfusion reaction and septicemia were kept in mind and the patient did not reveal any evidence of serological incompatibility. Culture of the blood bag at 4°C, 20°C, and 37°C did not show any growth after 10 days of incubation. Total bilirubin was 68 mmol/l with direct bilirubin 42.2 mmol/l. Post transfusion Hb of the patient was 9g/dl. Blood urea and electrolytes were within normal limits. Simultaneous sample for blood culture was also taken and the patient was put on Ceftriaxone 1 g 12 hourly IV, and Gentamycin 40 mg 12 hourly IM. The fever, however, continued and touched the 42°C mark. The antibiotics were continued along with other appropriate management. After 24 hours, the blood culture revealed Salmonella spp resistant to Ampicillin, Amoxicillin, Cefuroxime, Cefotaxime, Ceftriaxone, Gentamycin, Pipracillin and Vancomycin. It was only sensitive to Ciprofloxacin and Amikacin. There was no previous exposure to 3rd generation cephalosporins.

The patients of sickle cell anemia are prone to repeated infections. This immune-compromised state is due to repeated vaso-occlusive crises which result in repeated infarctions and fibrosis of the spleen, leading to autosplenectomy and functional asplenia. The patient was afebrile at the time of admission, and coincidentally developed fever on the 3rd day, when he was already transfused a day earlier. Naturally, the possibility of any red cell alloantibodies which were missed in the crossmatch were considered. Moreover, transfusion of a
contaminated blood bag was also kept in mind. These 2 possibilities were excluded after doing tests on red cell serology and culture of the blood bag. The organism isolated from the blood culture of the patient belonged to Salmonella spp resistant to all 3rd generation cephalosporins. It was only sensitive to Amikacin and Ciprofloxacin. Third generation cephalosporins normally have enhanced activity against gram negative bacilli. In our experience, this is the first case of Salmonella septicemia resistant to 3rd generation cephalosporins, in Sharourah. Ceftriaxone - resistant Salmonella has been reported earlier in the United States.

In view of these findings we recommend: a. blood culture should be taken in all patients of sickle cell disease who present with fever and other signs of infection. b. common bacterial organisms causing infection in sickle cell patients include Hemophilus influenzae, Pneumococcus, Salmonella, Staphylococcus and Mycoplasma pneumoniae. All infections should be treated vigorously as in all immune compromised patients. However, if the fever and infection do not respond within 48 hours, re-assessment of the antibiotic regimen is indicated. By this time, it is possible that the blood culture sent initally may provide valuable information regarding isolation and sensitivity of the organism. Quinolones, including ofloxacin, ciprofloxacin (oral or IV infusion) and Amikacin are useful 2nd line antibiotics which may be added to the treatment already being given. c. all patients with painful crisis should be evaluated for infections as the underlying basis of crisis. Sickle cell crisis is a diagnosis of exclusion and should only be made when the possibility of local or systemic infections has been thoroughly considered and evaluated by appropriate use of cultures and radiologic and scanning techniques.

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