media for later reference; (*iii*) It is better audible in conditions where auscultatory findings are not of a good amplitude (pericardial effusion, fetal heart sounds, fine crepts, obesity); (*iv*) Simultaneous auscultation can be performed by several individuals with separate headphones; (*v*) Signals can be transmitted via telephone lines or internet providing the opportunity of tele medicine; and (*vi*) Signals can be analyzed by passing through an A/D converter, thus digitizing them. Subsequently, a fourier analysis can document any abnormal frequencies in auscultatory findings, helping in disease diagnosis. An on-line visual display of auscultatory findings is also possible.

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## Management of Beta Thalassemia

I read the recent article(1) on this subject with interest. In this connection I seek the following clarifications:

1. What is the most appropriate time to measure pre-transfusion and post-transfusion Hb in relation to that particular blood transfusion?
2. Regarding vaccination–

(*a*) Please specifically explain the effect of regular transfusion of adult blood (usually begins around 6 months of age and at recommended 3 weekly intervals) on measles vaccination. It has been stated previously that measles and MMR vaccine should be given at least 6 months after exchange transfusion(2).

(*b*) What is the role of vaccination against pneumococcus, *H. influenzae* b and meningococcus after splenectomy?

(*c*) Key messages opined that Hepatitis B vaccination should begin before start of transfusion therapy(1). In our country many parents including those of thalassemia children opt costly vaccination at later age and may not complete the vaccination as per schedule. Does this problem has any adverse effect on seroconversion in beta-thalassemia?

3. It was suggested that folic acid 5 mg per week be given while another article(3) favoured 2.5-5 mgm folic acid per day. What is better-per week or per day supplementation?
4. Is it possible to diagnose thalassemia major before 6 months of age without antenatal screening when the characteristic picture of worsening anemia with hepatosplenomegaly is not full blown but there is history of an affected sibling? Can hematological criteria be as useful in this age group as in older infants?

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## Reply

We have the following clarifications to offer;

1. Pre-transfusion Hb can be done at any time on the day of transfusion preferably at the time of establishing intravenous cannula for blood transfusion. The sample for cross matching should also be taken at the same time to avoid multiple pricks to the patient. Post-transfusion Hb should be done at 30 or more minutes after the end of the transfusion(1).
2. Regarding vaccination: (*a*) Since thalassemic children will receive small volume packed cell transfusion, transfused adult antibodies will be very low to affect immunization schedule; exchange transfusion is a vastly different situation(2).

(*b*) Vaccination against *Pneumococcus*, *H. influenzae* and *Meningococcus* should preferably be given 4-6 weeks prior to splenectomy, as it will take care of the immediate post surgical period. Adequate antibody levels are established by the time the patient undergoes surgery if the vaccines are given in this way. Although, it has been shown that in thalassemic patients, immunization before splenectomy results in higher antibody titers than after splenectomy, antibody titers are still adequate for protection in both groups(3). Thus, there is definite role of vaccination even after splenectomy if these had been missed earlier.

(*c*) In case of unvaccinated transfused patients, screening of hepatitis B indices precedes vaccination, which is then restricted to non-immune patients. The efficacy of this vaccine is well documented in transfused thalassemic children and seroconversion is no different from the general population(4).

3. Folic acid in the dosage of 4 mg/week is more than adequate as per current literature(1). There is no good reason for giving higher dosages as was recommended earlier.
4. It is now possible to diagnose thalassemia major at any age by DNA based diagnostic technologies. It is also possible to diagnose it by estimating the rate of globin chain synthesis in infants' blood samples as with prenatal diagnosis. The hematological criteria and electrophoretic pattern before 6 months of age may not give a definite diagnosis.

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