To the Editors:

A case of hypophosphatasia

An 8-week old girl was admitted for the management of multiple limb deformities. She was born vaginally at term. There was intrauterine growth retardation (IUGR). Although she had limb deformities (short and curved limbs) there were no perinatal complications. Birth weight was 2.2 kg, head circumference (9th centile), and length 44 cm (< -3 SD). A provisional diagnosis of metaphyseal chondrodysplasia was made. She was the third product of non-consanguineous parents. The first pregnancy ended as a first trimester abortion and the second in a 6-year old healthy child.

She was an active, alert baby weighing 3.1 kg (< -3 SD). Head circumference was 36 cm (2nd centile) and the length was 49 cm (< -3 SD). The anterior fontanelle was widely open, upper and lower limbs were short and curved (Figures 1 and 2). The cardiovascular system and abdomen were clinically normal. Serum calcium was 2.25 mmol/l (normal: 2.2 - 2.7 mmol/l). X-rays of the upper limbs, lower limbs and skull showed generalized osteopenia with curved femur and humerus. There were no fractures. Radiologically a differential diagnosis of osteogenesis imperfecta and hypophosphatasia were considered. To differentiate between the two, serum alkaline phosphatase was done. The levels were low, 86 U/l (normal range for infants 150-420 U/l). This confirmed the diagnosis of hypophosphatasia. Biochemical evaluation showed serum calcium of 2.3 mmol/l, serum phosphate 2.58 mmol/l (1.25 - 2.1 mmol/l) and serum alkaline phosphatase activity 41.5 U/l.

Hypophosphatasia is now recognised as an inborn metabolic disorder characterised by abnormally low levels of tissue non-specific alkaline phosphatase (TNSALP) activity. It results in defective skeletal and dental mineralisation (rickets, fractures and dental anomalies), and accumulation of enzyme substrates (phosphoethanolamine (PAE), pyridoxal-5'-phosphate (PLP) and inorganic pyrophosphate) (1). The intestinal and placental ALP activity is normal (2).

Clinically there are four forms of hypophosphatasia, perinatal, infantile, childhood and adult (3). The perinatal and infantile forms are inherited as autosomal recessive traits and childhood and adult forms show an autosomal dominant inheritance (2,3). The lethal forms (perinatal and infantile) are characterised by moth-eaten appearance at the ends of long bones, deficiency of ossification throughout the skeleton and marked shortening of long bones. Milder forms will present with bowing of legs and variable degrees of short stature (2). Less common features are wormian bones, poor calcification of skull bones, delayed closure of fontanelles, dental hypoplasia, delayed eruption and premature loss of teeth. Hypercalcaemia may lead to nephrocalcinosis. In the childhood form frequent fractures, bone pain and milder skeletal deformities will be seen (2). There is defective metabolism of PLP resulting in reduced levels of gamma-aminobutyric acid (GABA) in the brain which may cause seizures (3).

Diagnosis is by confirming low serum total alkaline phosphatase activity, irregular and incomplete ossification of bones and an increase in urine PEA and PLP (4). Neutrophil alkaline phosphatase (NAP) score has been reported to be low in isolated cases and may be diagno-
Preponderance of blood group B among dengue fever patients with serious complications in a tertiary care hospital

In the recent past dengue epidemics in Sri Lanka have caused considerable morbidity and mortality. A literature search revealed little information regarding those who are more susceptible to have serious forms of dengue fever. We observed that development of severe forms of the disease could be associated with certain blood groups, and did retrospective analysis of the case records of all patients admitted to Sri Jayawardenapura General Hospital adult medical wards with suspected dengue fever during March, April and May 2002.

Of 183 suspected dengue fever patients admitted, 146 (80%) were confirmed to have dengue fever. Of the confirmed cases, 7 (5%) had dengue haemorrhagic fever (DHF), 7 (5%) had dengue shock syndrome (DSS) and 132 (90%) had uncomplicated dengue fever (DF).

Among DF cases, 0 positive was the commonest (57%) blood group. Of DHF and DS cases 12 (85%) had B positive blood group.

Suspected dengue fever, confirmed dengue fever, DHF and DSS were defined in this study according to WHO guidelines and definitions, except that the confirmed cases had only one positive IgM antibody report on the 5th to 7th day of fever (1,2).

According to reported ABO and rhesus blood group distributions in Sri Lanka, the commonest blood group is O positive (43.42%), and second commonest is B positive (25.78%). A positive, AB positive and other blood groups accounted for 21%, 5.13% and 4.67% respectively (4). Those with the B positive blood group showed an overwhelming predilection (Table) to DHF and DSS (P value 0.00). This observation has not been reported previously. This association could help to predict complications of dengue. However, it needs to be confirmed by studying larger samples of dengue patients.

Table. Association between blood groups and DHF/DSS

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Complication</th>
<th>No Complications</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DHF/DSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B positive</td>
<td>12</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Other group</td>
<td>2</td>
<td>102</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>126</td>
<td>140</td>
</tr>
</tbody>
</table>

* (Six were excluded, as blood groups were not available)