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Lead Levels in Cord Blood

Lead is not a natural body element and hence it is important to establish "normal" levels.[1] There have been many attempts to quantitate and define the meaning of "normal" with regard to human blood lead determinations. These attempts measure blood from varied populations: adults working in industrial situations, hospitalized children of varying ages, and urban ghetto dwellers.[1-4] It is well known that lead in high concentrations in the human body produces disease and permanent brain damage.[5-7] However, the effects of chronic exposure to lower levels of blood lead (below 60 μg/100 ml) are largely unknown. Speculations have ranged from the supposition that there are no measureable effects, to fears that low lead levels may produce subtle forms of minimal brain damage including learning disorders and personality disturbances. Recent work by Hernberg and Nikkanen in Finland,[8] Millar, *et al.*, in the United Kingdom[9] and Weissberg, *et al.*,[10] shows a demonstrable inverse relationship between low blood lead levels (in the range of 5 to 40 μg) and the activity of the enzyme δ-aminolevulinic acid dehydrogenase as measured *in vitro* in hemolysates of human red blood cells. This suggests that these "normal" levels may indeed be subclinically toxic. The toxicity of lead at these low levels must be defined. Then, suspected lead poisoned patients may be compared against these "normal" values. Since previous studies in this regard have concerned themselves with children with varying degrees of exposure to environmental lead,[1-4,11-13] it was felt that there might be value in measuring cord blood lead levels in newborn infants to approximate more closely the unexposed subject and to increase our base line information.

Method

Twenty-four mothers were included in this study which was conducted over a period of 1 year to rule out seasonal variation. All were followed and delivered by the same obstetrician in the same hospital. Of these 24, 11 were from suburban middle class backgrounds and 13 were from an urban ghetto known as the "Hill" in New Haven. Specimens were obtained as follows:

(1) venous maternal blood during labor
(2) fetal cord blood at the time of delivery

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mercury, strontium 90, chromium, selenium, and others becomes more prevalent, it will become increasingly important to assess the effects of these substances on human beings more accurately. Standards for their control will become increasingly crucial.

Summary

Blood lead levels were determined on 24 mothers during labor and on the blood of their newborn offspring.

The mean value for the mother's blood lead was 13.2 μg/100 gm (range 10 to 20) and for the cord blood 12.3 (range 10 to 20) μg/100 gm whole blood.

These levels are lower than "normal" blood lead standards usually accepted in the diagnosis and treatment of childhood lead poisoning.

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The Incidence of Associated Anomalies in 105 Patients with Congenital Adrenal Hyperplasia

A survey of 105 patients with defective adrenal steroid 21-hydroxylation, the most common defect in congenital adrenal hyperplasia, has been carried out to determine the presence of additional congenital or developmental anomalies. The following is a report of this survey.

The diagnosis of congenital adrenal hyperplasia was suspected in infants who presented with ambiguous genitalia or with defect in electrolyte metabolism manifested by failure to thrive, vomiting and dehydration with hyponatremia and hyperkalemia. Measurement of elevated levels of urinary 17-ketosteroids, 11-keto