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PURIFIED PARATHYROID HORMONE IN THE FIRST DAYS OF LIFE.

It is not easy to interpret the behaviour of the parathyroid hormone (PTH) in the first days of life, due to the heterogeneity of the circulating forms. 30 newborns hospitalized for minimal pathology and 20 adults as controls were studied. A small blood sample was drawn from cord and at 1,2,3,4 days of life for determination of immunoreactive COOH-terminal, middle molecule (MM) and NH_2-terminal PTH and for determination of MM PTH after reversed phase chromatography. Total immunoreactivity recovered was 75% for adults and only 45% for newborns. Both MM (cord 84.73 $\pm$ 39.5 pg/ml) or COOH-terminal (cord 1.9 $\pm$ 0.93 mU/ml) showed a significant increase on the 1st day of life (265.31$\pm$184.3; 2.88$\pm$1.12 respectively); NH_2-terminal (cord 17.96$\pm$4.36 pg/ml) only in the 2nd day (23.45$\pm$6.75).
The significance was always $p<0.001$. After reversed phase chromatography a significant ($p<0.02$) increase of MM PTH (cord 29.2$\pm$10.27) was observed only in the 3rd day of life (82.10$\pm$3.35 pg/ml). Our results testify that the percentage of immunoreactivity reversed is different in the newborns and in the adults, and that time of increase of MM PTH after reversed phase of chromatography in the newborns is different. In conclusion we suggest that the molecular structure of iPTH may be different in the newborns and adults.

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PHOSPHATE METABOLISM IN RESPIRATORY DISTRESS SYNDROME (RDS).

The metabolism of calcium and phosphate with references to blood cells was studied in five preterm infants with RDS. The times of the sampling were in the first 12hrs, on the 3rd day of oxygen (O_2) therapy and 24hrs after the discontinuation of O_2. The results were compared with those of matching controls. SeCa started low (7.59±0.4 mg/dl) as in controls (7.61±0.33 mg/dl) and rose steadily to reach higher levels in the third sample (10.86±0.45 against 9.55±0.22 mg/dl). The preterm babies were on IV Ca-gluconate during O_2 therapy. Inorganic phosphate (Pi) in plasma was low (4.03±0.37 against 5.4±0.32 mg/dl) and continued falling till the end of the study to 2.83±0.3 compared to 6±0.03 mg/dl of the corresponding controls. In red cells Pi started normal (2.68±0.34 mg/dl) but fell all through to 1.07±0.37 compared to 3.12±0.32 mg/dl of the controls. Red cell ATP and 2,3DPG were found low at start (1.22±0.17 and 3.88±0.61mmol/l respectively) and did not improve with the administration of O_2. In conclusion RDS leads to disturbances in Pi metabolism which persist even after the subsiding of the disease and the end of O_2 therapy. The IV administration of phosphate might have a beneficial effect on these neonates specially during the acute stage of RDS. However further work is needed to investigate the time course and the extend of these disturbances.