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TRANSCUTANEOUS OXYGEN MONITORING IN SICK NEWBORN INFANTS. Vain, N. Loma Linda. Univ. Medical Center, Loma Linda, California. USA.

Thirty seven newborn infants with respiratory distress were cared for using simultaneously conventional monitoring, arterial catheters and transcutaneous oxygen monitoring (tcpO<sub>2</sub>). The correlation between tcpO<sub>2</sub> and arterial pO<sub>2</sub> was excellent in all cases (R=0.96). The tcpO<sub>2</sub> was always faster and more efficient than intermittent arterial sampling in predicting the requirements of oxygen, continuous positive pressure (CPAP) and assisted ventilation. Heelsticks and peripheral arterial puncture usually induced crying, making the results less reliable. In 51/97 episodes of apnea the nurse was first alerted by the alarm of the tcpO<sub>2</sub> monitor. An abnormal tcpO<sub>2</sub> was the first warning sign in all cases of complications including 3 infants with pneumothorax, 6 episodes of displacement of the endotracheal tube to the right bronchus, 11 instances of displacement of the nasal prongs, and 1 case of iatrogenic hyperoxia. While serious complications of arterial puncture and catheterization are not exceptional, the tcpO<sub>2</sub> electrode only produced small hyperemic areas which lasted from 8 to 40 hours in this series of infants. TcpO<sub>2</sub> monitoring provides reliable and continuous data with a very rapid response to changes in the infants oxygenation, and it is therefore an excellent technique for management of sick neonates.

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EFFECT OF SODIUM SALICYLATE ON INSULIN SECRETION: STUDIES ON THE MECHANISM OF ACTION. Basabe J.C., Bruno L., Cortese J., Fernandez M.E., Astolfi E. Fund

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The curve that depicts the inter-relation of different glucose concentrations (5.5 to 27.5 mM) to the insulin response is shifted to the left by the addition of sodium salicylate (1.87 mM) when incubation of pancreas slices are used. Phentolamine but not sodium salicylate, overcomes the inhibitory effect of epinephrine on insulin secretion induced by glucose. The highest insulin response is obtained by theophylline or pentoxifylline at 10 mM concentrations (in the presence of glucose 11 mM). When sodium salicylate is present in the incubation medium, only 5 mM theophylline or pentoxifylline plus 11 mM glucose achieves the highest insulin response. Salicylate lowers the free tubulin pool an action that is impaired by imidazole; however imidazole does not impair the effect of A23187. The results shown suggest: a) sodium salicylate increases beta cell sensitivity to glucose, b) adrenergic tone modifications are not related to the salicylate mechanism of action c) an increment in the cAMP production seems to be the main way by which salicylate increases insulin secretion, d) the effect of salicylate on the microtubular system are indirect and mediated through an increment of the pancreatic cAMP.

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SALICYLATE INTOXICATION AND INSULIN SECRETION: "IN VIVO" AND "IN VITRO" STUDIES. Basabe J.C., Bruno L., Alvarez E., Fernandez M.E., Astolfi E. Fundacion FLIP and Unidad de Toxicología. Htal. de Pediatría "P. de Elizalde". Buenos Aires. Argentina.

Salicylates intoxication induces a lower blood glucose level than control in rats (74.80 ± 6 vs 130.07 ± 5.4 p < 0.01). Slices from pancreas of intoxicated rats, secrete more insulin than controls when incubated in the presence of glucose (1.27 ± 0.08 vs 0.79 ± 0.03, µg/mg w.t./30min; p < 0.001). Sodium salicylate increases both phases of secretion induced by glucose (5.5 to 16.5 mM) in the isolated perfused rat pancreas. The increment is not observed when 27.5 mM glucose is utilized. Puromycin, 80 µg/ml has no effect on the action of sodium salicylate on the insulin secreted by glucose 5.5 and 16.5 mM. The results shown suggest that: a) sodium salicylate increases both phases of insulin secretion induced by glucose "in vitro" and "in vivo"; b) both, salicylate and glucose, cause insulin secretion by acting on the same compartment; c) the increased sensitivity of the beta cell to glucose, induced by salicylate, is unrelated to insulin synthesis; d) the effect of sodium salicylate on insulin secretion induced by glucose, could explain, at least in part, the hypoglycemia observed in the salicylate intoxication.

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CEREAL BLEND AS SUPPLEMENT TO BREAST FEEDING. González S., \*O'Donnell A. and \*\*Abeyá E. \*Research Council of Prov. de Buenos Aires. \*\*Center for Studies

on Infant Nutrition. Buenos Aires. Argentina.

A growth study was performed on 17 infants aged 2-3 months fed with fixed amounts of human milk (HM), from 400 to 600 ml per day and supplemented, three times a day, with cereal blends, calculated to fulfill essential amino acids (EAA), total protein and energy advisable intakes. The base of the calculations uses the relative excess of EAA in HM in relation to the infant's EAA requirements in order to supplement vegetable proteins quality. Energy deficits were covered with vegetable oil and/or saccharose. After the second day of being supplemented with cereal gruels, all the infants ingested the advisable protein and energy intakes. The growth average was 150% in relation to what was expected for the weight (p < 0.01), except in three infants who were supplemented with a high fibre content cereal. Cereal gruels, fed together with fixed intakes of 400 ml of HM, provided a good catch-up after severe infectious disease episodes. Therefore, cereal blends with vegetable oil and saccharose as supplements to HM are promising alternatives to diminish the risks of bottle-feeding in poor sanitary environments, without interfering with breast-feeding.