



Neonatal pig enterocytes develop the capacity to oxidize long chain fatty acids

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adults (117.2 ± 6.12 versus 144.0 ± 20 min, $P < 0.01$).

2) The levels of anti-oxLDL autoantibodies, detected with an ELISA method. Anti-oxLDL IgG titers were higher in children (1.67 ± 0.41 versus 1.28 ± 0.41 ratio, $P < 0.01$).

3) Vitamin E levels after extraction with hexane by HPLC. No significant difference was present between children (3.70 ± 0.62) and adults (3.20 ± 0.9 nmol/mgLDL).

The increased susceptibility to oxidation of LDL in vitro and the high antibodies titers detected demonstrates that LDL oxidation occurs already during childhood. The possible pathophysiological relevance of these findings is, at the present, obscure and additional work is required.

Neonatal pig enterocytes develop the capacity to oxidize long chain fatty acids. M.T. Morel^a, P. Guesnet^a, C. Kohl^b, C. Prip-Buus^b, B. Darcy-Vrillon^a, J.P. Pégorier^b, P.H. Duée^a (LNSA, Inra, 78350 Jouy-en-Josas; ²CEREMOD, CNRS, Meudon-Bellevue).

The post-natal period is critical for intestinal development. At that time, neonates are fed maternal milk, which is a high-fat diet. The aim of the present work was to investigate the metabolic fate of oleate – a monounsaturated long chain fatty acid – in neonatal pig enterocytes.

Experimental: Enterocytes isolated from the jejunum-ileum of newborn (0 d) or suckling (2 and 13 d) pigs were incubated with 1- $[^{14}\text{C}]$ oleate (1 mM) and carnitine (1 mM), with or without glucose (5 mM). The amount of oleate oxidized versus incorporated into triglycerides (TG), phospholipids (PL), and cholesterol esters was measured. The specific activity of the oleate precursor pool was estimated by taking into account the radioactivity present in triglycerides.

Results: Whatever the age, esterification (TG + PL synthesis) was the main metabolic pathway of oleate metabolism, accounting for $89 \pm 1\%$ at 0 and 2 d, and for $86 \pm 1\%$ at 13 d. In all cases, the capacity to esterify oleate was stimulated ($P < 0.05$) by adding glucose to the incubation medium. Taking into account isotopic dilution by endogenous fatty acids, the flux of oleate oxidized was found to increase dramatically after 2 d of suckling (6.6 ± 2.0 versus 1.3 ± 0.2 nmol/30 min/ 10^6 cells; $P < 0.05$). This was paralleled by a 2.5-fold increase in mitochondrial carnitine palmitoyl transferase I (CPT I) activity; at the same time, the sensitivity of the enzyme to inhibition by malonylCoA strongly decreased (IC_{50} : 229 ± 40 nM at 2 d versus 8 ± 4 nM at 0 d). This was also accompanied by a significant increase of the CPT I protein.

Conclusions: Although oxidation represents a minor pathway of oleate metabolism in enterocytes, expression of CPT I is required to allow this oxidative capacity to develop after birth.

Treatment effect of growth hormone substitution in adults on body composition and on dynamic parameters of carbohydrate and energy metabolism. Y. Khalfallah, C. Louche Pelissier, M. Laville, J.P. Riou, G. Sassolas (Inserm U449, Faculté de Médecine R.T.H. Laënnec, 69572 Lyon cedex 08, France).

Growth hormone (GH) action on carbohydrate, lipid and protein metabolisms and on body composition is well known. However, most of these effects were obtained with pharmacological doses of GH during short term trials.

The aim of our study was to determine the metabolic status of 11 secondary GH deficient adults (GHD) before and 1 year after 'physiological' doses of substituted GH. All these patients had a body composition measured by impedancemetry and a