Serum lipoprotein composition and amounts in eutrophic and hypotrophic newborn at term. H Merzouk [1], M Meghelli-Bouchenak [2], N Korso [3], M Lamry [2], H Hamou [2], K Kerzabi [3], J Bellevile [4] *([1] Université de Tlemcen, Laboratoire de Physiologie Animale, Tlemcen; [2] Institut des Sciences de la Nature, Université d'Oran, Laboratoire de Physiologie Animale et de la Nutrition, Oran; [3] Centre Hospitalo-Universitaire de Tlemcen, Tlemcen, Algeria; [4] Université de Bourgogne, Faculté des Sciences Mirande, Unité de Recherches de Nutrition Cellulaire et Métabolique, Dijon, France)*

In order to best adapt the diets of nutritional rehabilitation in hypotrophic newborn at term, their lipoprotein profile was compared with that of eutrophic newborn at term.

Twelve eutrophic newborn (birth weight 3 570 ± 93 g) and 18 hypotrophic newborn (birth weight 2 290 ± 33 g) were the subject of this study. Blood samples were collected from the umbilical vein immediately after delivery and cutting the umbilical cord. The 3 lipoprotein fractions (VLDL, LDL and HDL) were separated by ultracentrifugation in a single-spin dicontinuous gradient. Aproproteins of different lipoproteins were subjected to continuous polyacrylamide gradient and to electrofocusing. Phospholipid amounts were determined by their phosphorus content. Total and unesterified cholesterol was analyzed by gas liquid chromatography.

In the hypotrophic newborn, compared with the eutrophic newborn, the apoprotein levels of VLDL were increased, especially apo B and apo E. The amounts of apo AI, AII, CII, CIII, phospholipids and cholesteryl esters of HDL were reduced in the hypotrophic newborn compared with the eutrophic newborn. The protein, phospholipid and total cholesterol levels of LDL were lower in the hypotrophic than in the eutrophic newborn.

In conclusion, hypotrophy involved an increase in VLDL and a decline in HDL and LDL. Moreover, changes occurred in apoprotein and lipid compositions in the 3 fractions.

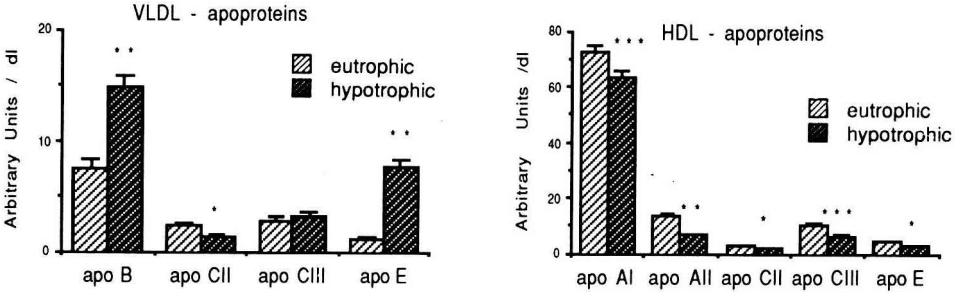

Fig 1. Each value represents mean ± SEM. Comparison of eutrophics (n = 8) *versus* hypotrophics (n = 10) was performed using Student's t-test; * $P < 0.01$; ** $P < 0.001$; *** $P < 0.0001$.