P-115 - VERIFICATION OF THE REFERENCE INTERVAL FOR THE DETERMINATION OF ESSENTIAL FATTY ACIDS IN BLOOD

Cesari N, Sánchez-Campos S, Naretto A, Otero G, Malmoria C

Laboratorios IACA. Bahía Blanca – Argentina. metabolopatias@iaca.com.ar

There are fatty acids that the body cannot synthesize, and therefore receive the name of essential fatty acids. These acids are omega-3 fatty acids and omega-6 fatty acids and must be contributed exclusively by the diet. Alpha-linolenic acid (ALA) occupies the main role within the family of omega-3 fatty acids, as it is responsible for synthesizing eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Linoleic acid (LA) is the most important within the family of omega-6 fatty acids and is responsible for synthesizing arachidonic acid (AA). Currently it has seen its important application in intestinal anti-inflammatory activity, nutritional diets in athletes and in prenatal and neonatal period. The objective of this work is to verify the reference interval of essential fatty acids in blood of three age groups. We used 80 samples of centrifuged blood without anticoagulant (serum), 30 samples of patients older than or equal to 18 years (group1), 30 of between 1 and 17 years (group2) and 20 of children less than one year of age (group3). A non-commercial method of extraction and derivatization was used and analyzed by gas chromatography coupled to mass detection. The following reference intervals were found for the different age groups in units umol / L; ALA (group1): 50 to 200, ALA (group2): 30 to 200, ALA (group3): 10 to 250; LA (group1): 450 to 1500, LA (group2): 600 to 1500, LA (group3): 600 to 1500; EPA (group1): 2 to 46, EPA (group2): 2 to 40, EPA (group3): 5 to 60; AA (group1): 180 to 900, AA (group2): 240 to 600, AA (group3): 100 to 900; DHA (group1): 50 to 250, DHA (group2): 35 to 150, DHA (group3): 10 to 250. Reference intervals for essential fatty acids were found with the method developed in our Laboratory that responds to patients of the Argentine population and of different ages. We are able to quantify these essential fatty acids and their metabolic relationships in serum. This work also proposes to investigate the relationship between these analytes and the nutritional requirements of patients and their usefulness in anti-inflammatory treatments and prenatal and neonatal development.