

# Gambaran profil asam amino pada anak normal dan undernutrition dengan metode liquid chromatography tandem mass spectrometry di RSUPN Cipto Mangunkusumo = Amino acid profile in normal and undernutrition child using liquid chromatography tandem mass spectrometry method at Cipto Mangunkusumo hospital

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## Abstrak

### <b>ABSTRAK</b><br>

Latar belakang: Protein merupakan salah satu nutrisi penting dalam pertumbuhan yang kualitasnya dipengaruhi oleh asam amino pembentuknya. Asam amino merupakan bahan baku pembangun semua jenis sel, berperan dalam homeostasis, pertahanan tubuh, pertumbuhan, dan perkembangan. Penelitian ini merupakan penelitian pendahuluan untuk mendapatkan gambaran profil asam amino meliputi glisin, alanin, prolin, valin, leusin, ornitin, metionin, fenilalanin, arginin, sitrulin, tirosin, aspartat, dan glutamat menggunakan metode LC-MS/MS pada anak undernutrition dan anak normal di RSUPN Cipto Mangunkusumo. Metode: Desain penelitian adalah deskriptif analitik dengan 60 subjek, penelitian berlangsung pada bulan Desember 2016 sampai April 2017. Sampel menggunakan dry blood spot dan diperiksa dengan metode LC-MS/MS. Hasil: Hasil penelitian didapatkan 12 anak undernutrition dan 18 anak normal dengan rerata berat badan, tinggi badan dan ketiga z-score BB\_TB, BB\_U, dan TB\_U didapatkan lebih rendah secara bermakna pada kelompok undernutrition. Hasil CV uji ketelitian within run asam amino dengan LC-MS/MS berkisar 1.76 ndash; 12.03 . Kesimpulan: Tidak terdapat perbedaan bermakna antara profil asam amino esensial anak undernutrition dan anak normal, namun didapatkan perbedaan untuk asam amino non esensial kadar glisin dan glutamat lebih tinggi pada kelompok undernutrition dan bermakna secara statistik.

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### <b>ABSTRACT</b><br>

Background Protein is one of the nutrients needed for child rsquo s growth, of which quality is affected by its constituent amino acids. Amino acids are essential to all types of cells, playing a role in homeostasis, the body 39 s defenses, growth, and development. This study is a preliminary study that aims to determine the profile of amino acids consisting of glycine, alanine, proline, valine, leucyne, ornithine, methionine, phenylalanine, arginine, citruline, tyrosine, aspartic acid, and glutamic acid using LC MS MS method in normal and undernutrition child at RSUPN CM. Method This was a descriptive analitic study conducted on 60 subjects, the study was held on December 2016 until April 2017. Sample using dry blood spot and analyzed with LC MS MS method. Result Study subjects consisted of 12 undernutrition and 18 normal children with a mean weight, height, and all z score W H, W A, H A are lower in undernutrition group. Within run result demonstrated a CV amino acid with LC MS MS ranged from 1.76 ndash 12.03 . Conclusion There were no difference between normal child rsquo s essential amino acid profile with undernutrition child rsquo s, but there were difference for non essential amino acid glisine and glutamate gives a significantly higher result in undernutrition group.