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50 Years Ago in *The Journal of Pediatrics*

Albumin Synthesis in Children: Still a Relevant Biomarker

Walker WA, Ulstrom R, Lowman J. Albumin synthesis rates in patients with hypoproteinemia. J Pediatr 1971;78:812-20.

Walker et al undertook a detailed analysis of hepatic albumin synthesis rates in 3 groups of children, namely, those with excessive gastrointestinal or renal protein losses, those with advanced liver disease, and hospitalized controls. Using isotopic labelling of the precursor amino acid methionine, the authors determined that children with protein losses could rapidly increase synthetic capacity, in contrast to controls as well as those with limited liver synthetic function.

Documenting this extra capacity for hepatic albumin synthesis was an important piece in the puzzle supporting the role of nutritional support in states of protein loss (eg, nephrosis, colitis, and other catabolic illnesses). Moreover, this work anticipated a critical safety breakthrough, namely the administration of nonradioactive isotopes for nutritional assessment. The use of stable isotopes in children has become widespread, even among neonates.[1] When ventilated premature infants, for example, are administered a continuous infusion of amino acids with dextrose, the rate of albumin synthesis (as measured by ^{13}C-leucine incorporation) is substantially higher compared with infants receiving only intravenous glucose.[2] Moreover, low serum albumin alone continues to be an important prognostic sign for overall survival, intensive care unit length of stay, and other important morbidities in numerous pediatric populations.[3,4]

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