

form of PN reserved exclusively for patients undergoing peritoneal dialysis is termed IPPN, or intraperitoneal amino acid (IPAA) infusion.⁵⁴ It is administered via an intraperitoneal route during regular peritoneal dialysis session. IPAA infusion works by substituting an amino acid-containing dialysis solution for a part of the standard dialysis solution— that is, a glucose-based peritoneal dialysis solution. There are 2 major types of amino acid-containing dialysis solution: (1) an amino acid-based peritoneal dialysis solution without glucose^{54,87–90} and (2) a combined amino acid and glucose peritoneal dialysis solution.^{91–94} The goal of IPAA infusion is to compensate for the unavoidable peritoneal losses of proteins and amino acids, the reduction of dietary protein intake, and the normalization of plasma concentrations of amino acids while maintaining ultrafiltration and small solute clearance.⁸⁸ Of note, it has long been recognized that the quantity of amino acids supplied by 1 exchange of amino acid-based dialysis solution surpasses the daily dialysis-induced losses of amino acids.^{18,95} The effectiveness of IPAA infusion has been evaluated in a variety of research settings. Findings from an early metabolic study demonstrated increased serum concentrations of transferrin and total protein, normalized fasting plasma amino acid pattern, net protein anabolism, and positive nitrogen balance with the utilization of an amino acid-based peritoneal dialysis solution.⁸⁷ A further study provided additional evidence of an amino acid-based peritoneal dialysis solution in enhancing protein synthesis without affecting protein breakdown.⁹⁶ In spite of the favorable outcomes from these metabolic studies, results from clinical trials,^{88–90} including both RCTs and non-RCTs, ranging from 3 months to 3 years in their study periods, were inconclusive of the nutrition improvement with IPAA infusion using an amino acid-based peritoneal dialysis solution. The inconsistencies may be attributable to insufficient sample size and the presence of such confounding comorbidities in study participants as peritonitis, infectious illnesses, and heart failure.^{88,97} A high dropout rate has also been noted in these trials, in addition to differences in dietary control and monitoring.^{88,97} To date, there is merely 1 RCT that investigated survival and hospitalization rates among peritoneal dialysis patients receiving IPAA infusion using an amino acid-based peritoneal dialysis solution.⁸⁸ This study indicated negative findings in peritoneal dialysis patients with PEW. Despite this, the most notable improvement was seen in peritoneal dialysis patients with hypoalbuminemia,^{89,90}