
Abstract:
Protein catabolism should be reduced and protein synthesis promoted with parenteral nutrition (PN). Amino acid (AA) solutions should always be infused with PN. Standard AA solutions are generally used, whereas specially adapted AA solutions may be required in certain conditions such as severe disorders of AA utilisation or in inborn errors of AA metabolism. An AA intake of 0.8 g/kg/day is generally recommended for adult patients with a normal metabolism, which may be increased to 1.2-1.5 g/kg/day, or to 2.0 or 2.5 g/kg/day in exceptional cases. Sufficient non-nitrogen energy sources should be added in order to assure adequate utilisation of AA. A nitrogen calorie ratio of 1:130 to 1:170 (g N/kcal) or 1:21 to 1:27 (g AA/kcal) is recommended under normal metabolic conditions. In critically ill patients glutamine should be administered parenterally if indicated in the form of peptides, for example 0.3-0.4 g glutamine dipeptide/kg body weight/day (=0.2-0.26 g glutamine/kg body weight/day). No recommendation can be made for glutamine supplementation in PN for patients with acute pancreatitis or after bone marrow transplantation (BMT), and in newborns. The application of arginine is currently not warranted as a supplement in PN in adults. N-acetyl AA are only of limited use as alternative AA sources. There is currently no indication for use of AA solutions with an increased content of
glycine, branched-chain AAs (BCAA) and ornithine-alpha-ketoglutarate (OKG) in all patients receiving PN. AA solutions with an increased proportion of BCAA are recommended in the treatment of hepatic encephalopathy (III-IV).