Therefore, we investigated the effects of water soluble vitamins on growth of microorganisms in PPN solutions” Omotani et al (2017).

Abstract:

Peripheral parenteral nutrition (PPN) solutions contain amino acids, glucose, and electrolytes, with or without some water soluble vitamins. Peripheral venous catheters are one of the causes of catheter related blood stream infection (CRBSI), which requires infection control. In Japan, PPN solutions have rarely been prepared under aseptic conditions. However, in recent years, the necessity of adding vitamins to infusions has been reported. Therefore, we investigated the effects of water soluble vitamins on growth of microorganisms in PPN solutions. AMINOFLUID® (AF), BFLUID® (BF), PARESAFE® (PS) and PAREPLUS® (PP) PPN solutions were used.

Water soluble vitamins contained in PP were also used. Causative microorganisms of CRBSI were used. Staphylococcus epidermidis decreased after 24 hours or 48 hours in all solutions. On the other hand, Escherichia coli, Serratia marcescens, Pseudomonas aeruginosa, Staphylococcus aureus and Candida albicans increased, especially in PP. When each water soluble vitamin was added to BF and PS, growth of S. aureus was greater in solutions that
contained nicotinamide than in solutions that contained other vitamins. As for C. albicans, they grew in all test solutions. C. albicans grew especially well in solutions that contained biotin. When commercial amino acids and glucose solutions with electrolytes are administered, in particular those containing multivitamins or water soluble vitamins, efforts to control infection must be taken to prevent proliferation of microorganisms.

Reference:


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