EDITORIAL

Dietary Fiber: Is It Hype or Useful?

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Dietary fiber consists of soluble and insoluble fiber. Soluble fiber is fermented in the colon to short-chain fatty acids (SCFAs) that are an important luminal source of nutrition for colonic mucosal cells and have several important physiological effects. Acutely ill patients are prone to developing SCFA deficiency due to change in the colonic microbiome and change in feed characteristics. Short-chain fatty acids help reduce diarrhea by a number of mechanisms including prevention of mucosal atrophy, promoting mucosal integrity, increasing growth of beneficial bifidobacteria, increasing mucus production, and stimulating absorption of water and salt in the colon.[1]

There are several randomized studies and a few systematic reviews of soluble fiber in the management of diarrhea in critically ill patients.[2–6] Guar gum is the most commonly used source of soluble fiber in previous studies. The article by Kaweesak Chittawatanarat et al. in the current issue of IJCCM describes the extraction of dietary fiber from Jerusalem artichoke, a commonly used tuber with several purported salutary health effects, by a novel method. The final extract contains insoluble fiber (5 g), soluble fiber 15 g), and fructans (80 g) per 100 g of processed Jerusalem artichoke. In the accompanying pilot study of 11 patients, the extract was shown to be well tolerated (7/11) and produced a reduction in diarrhea as measured by the King's stool chart.[7] The only reported complication of increased gastric residual volume in their study may or may not have been the result of the added extract. Their cohort of patients was quite sick and had a high mortality (4/11), albeit not related in any way to the Jerusalem artichoke extract.[8]

Available guidelines do not make a firm recommendation for or against soluble fiber addition to enteral nutrition given the mixed evidence from the available randomized studies and systematic reviews.

I think the time is ripe for a multicenter randomized trial that not only compares the different available sources of soluble fiber with placebo for reduction of diarrhea but also looks at other important outcomes in critically ill patients like length of stay, organ failure, and mortality.

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