

# Correspondence

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### PERIOPERATIVE TRANSFUSION OR ALBUMIN AS RISK FACTORS IN COLORECTAL SURGERY

With interest I read the report of Torchia and Danzinger (*Can J Surg* 2000;43:212-6) drawing attention to a possible relationship between the perioperative administration of albumin and the development of postoperative infection in colorectal surgery. The authors state in their conclusion that “perioperative transfusion or albumin administration significantly increases the risk of postoperative infection in colorectal surgery patients.” This gives an impression that a cause-effect relationship is likely. The study should not lead us to such an impression. Although albumin administration was shown in their multivariate analysis to be a factor that correlated with postoperative infection, and although the list of factors that were addressed, including the disease severity index, covered several potential conditions, the list of factors that were tested was not comprehensive. More specifically, the list did not test independently and in a direct fashion the conditions that led the authors, in their practice, to administer albumin in the first place. It appears that the majority of the patients who received albumin did so in response to hypovolemia, and a minority received albumin in response to low albumin levels or as part of a parenteral nutrition formula. Unless a study demonstrates a role for albumin therapy independent of hypovolemia (for instance, randomly comparing those whose blood volume is expanded using albumin with those whose blood volume is expanded with other agents), low albumin levels or other indicators of the patient’s nutritional status, I do not see that the authors’ conclusion should be taken as indicating a cause-effect re-

lationship between the administration of albumin *per se* and the development of postoperative infection in colorectal surgery. It is at least equally possible that in a population of hypovolemic patients who share the same underlying problems, and after correcting for all possible confounding factors, if albumin administration is compared to other volume expanders, an independent correlation between albumin administration and development of infection may be lost. The assumptions raised are, however, quite interesting. Further studies that specifically address this issue will be received with enthusiasm.

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*Prof. Torchia replies*

Dr. Hanafy is absolutely correct in suggesting that an unknown or untested factor common to the patients who received serum albumin could have been the cause of the increased rate of postoperative infection seen in this subgroup. Retrospective studies are often more limited in their ability to comprehensively address confounders since one cannot choose which data should have been collected many months or years before. Recognizing the limitation of not being able to be exhaustive in our choice of factors included for analysis, we also included factors used by authors of similar studies.<sup>1-5</sup> Given the set of criteria that were chosen *a priori* as potential factors in the development of postoperative infections in colorectal surgery patients, the administration of albumin remains a risk factor in our study. We agree with Hanafy’s comment that the

ultimate test for demonstrating and validating a causal relationship would be a randomized prospective study.

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