

IV Filter Debate Continues

To the Editor:

I strongly disagree with Ms. Weinstein's conclusion (Product Commentary, May 1987, pp 220-221) that IV filters are not only justified but essential. The article starts out with an erroneous statement that is not referenced. Unless there is a new guideline of which I am not aware, the Centers for Disease Control (CDC) do not "weakly recommend the use of IV filters." The CDC strongly recommends *against it* in a Category II statement from 1981.¹ For those readers who are not familiar with the meaning of the CDC categories, Category II means that: "Measures in Category II are supported by highly suggestive clinical studies in general hospitals or by definitive studies in specialty hospitals that might not be representative of general hospitals. Measures that have not been adequately studied by have a logical or strong theoretical rationale indicating probably effectiveness are included in this category. Category II recommendations are viewed as practical to implement in most hospitals."

Ms. Weinstein states that many studies address IV fluid contamination but cites only one such study. Actually, very few infections are due to contaminated IV fluids, and in-line filters may increase the risk of fluid-related infection. Filters would trap the occasional organism and allow it to multiply on the filter membrane, resulting in release of toxins and septic shock.

Most organisms that cause IV-related infections originate at the IV catheter and skin junction and are from a contaminated catheter. Small numbers of bacteria that are intermittently shed into the bloodstream from other body sites, even in healthy individuals, can become trapped in the fibrin sheath that forms around the IV catheter. They may multiply there and can then be seeded into the blood-

stream causing bacteremia, septicemia, and shock. Filters will not prevent these infections.

Another nonissue for the use of filters is air in the tubing. Nurses have prevented air from causing problems in many ways, and can continue to do so now without a new and costly device.

IV-related phlebitis is due to many causes. First and foremost is the low pH of the IV solution. Use of catheters versus steel needles is another cause. These and other causes have often been discussed. Also, comments and critiques regarding Dr. Falchuck's article (cited by Ms. Weinstein) were published in an editorial,² and in several letters to the editor, my own included.³ Phlebitis, although it can be very uncomfortable, causes only minor morbidity in the majority of patients and does not justify an expenditure of \$80 to \$100 million a year in this cost-conscious era. Instead, proven methods of prevention should be followed. They consist of: (1) large volume filtration of admixtures in the pharmacy; (2) adequate dilution of "piggyback" medications; (3) slow administration of these additive mixtures, and (4) buffering IV solutions with heparin or hydrocortisone.

The statement that particulate matter from IV fluids causes "a myriad of conditions" is not referenced, nor are the statements and examples that follow. I am aware of the origins of these studies. They are old—prior to 1965—and describe animal experiments. They have not been corroborated in the past, are outdated, and are no longer applicable because particles such as those described in these studies are now filtered out during the manufacturing process. Particulate matter as a cause of phlebitis also is not a demonstrated problem in centrally delivered TPN solutions, especially if they are filtered at the site of admixing—in the pharmacy. I can, therefore, see no advantage to filters in that situation either. I would like to recom-

mend, however, that manufacturers address the low pH of IV solutions, other than by having nurses add buffers at the time of administration. The problem of phlebitis would then probably disappear and patients would be spared the discomfort of this condition.

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REFERENCES

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2. Friedland G: Infusion-related phlebitis—Is the in-line filter the solution? *N Engl J Med* 1985; 312:113-115.
3. Letters to the editor. *N Engl J Med* 1985; 312:1452-1454.
4. Tanner WA, et al: The influence of heparin on intravenous infusions: A prospective study. *Br J Surg* 1980; 67:311-312.

To the Editor:

I am writing about the quality of a recent article in *Infection Control* concerning IV filters.¹ I believe that the article is so biased and of such poor scientific quality that it should be followed by an opposing view. The article strongly suggests that IV filters are a standard of practice and says that the Centers for Disease Control (CDC) endorse the use of IV filters. In fact, the CDC opposes the use of these filters ("Using IV in-line filters is not recommended as a routine infection control measure. Category II.") I am disturbed by the medical-legal pressure created by the publication of such an article in a quality scientific journal. I feel that lawyers will use such an article to suggest that filters are a standard of care, especially since this journal published another article saying "filters should be an integral part of the IV administration set."² I don't believe that filters are a standard of care; I suspect that the large majority of SHEA (Society of Hospital Epidemiologists of America) members, for instance, do not work in hospitals that