Recount of prostaglandin E_1 therapy in a patient with Raynaud's phenomenon

To the Editor:

We examined a 21-year-old black woman who presented with a sudden onset of bilateral cold, painful, and cyanotic fingers, progressive during a 4-day period. The patient had a complicating history of ulcerative colitis, and at presentation, had severe anemia of 4.7 g/dL hemoglobin, and was of Jehovah's Witness faith. Her medications had included prednisone, ferrous sulfate, and olsalazine sodium.

By day 2, the patient had significant proteinuria (5310 mg/24 h) and renal insufficiency (creatinine clearance rate of 30 mg/24 h), associated with new onset hypertension (200/100 mm Hg). An angiogram of the right upper extremity (the elbow to the hand) showed complete occlusion with a tapering of the radial artery. Direct arterial infusion of nitroglycerin resulted in resumed blood flow to the phalanges. Serum cryoglobulins were positive, but antinuclear antibodies (ANA) and antineutrophil cytoplasmic antibodies (ANCA) were negative. The patient was given intravenous nitroglycerin (90 μg/h), oral nifedipine (120 mg/d), intravenous nitroprusside (3.5 μg/kg per minute), and intravenous injection of methylprednisolone sodium succinate (1000 mg).

A skin biopsy taken on day 4 was negative for vasculitis, showing only evidence of collapsed vessels. No improvement in vascular tone was identified, and significant quantities of morphine were administered to the patient to control pain. A stellate ganglion block offered no relief.

With the unavailability of iloprost,[1] we prescribed prostaglandin E_1 (PGE_1) for the treatment of Raynaud's phenomenon. The PGE_1 infusion was started at a rate of 10 μg/kg per minute and then doubled after the first 12 hours. The patient's pain decreased by the 15th hour of PGE_1 therapy.

The left hand fingers appeared to substantially improve with warmth and capillary refill. Some subjective improvement occurred in the right hand fingers. The infusion of PGE_1 was continued for 72 hours. Therapy was continued with nifedipine (120 mg/d), prazosin (10 mg/d), and captopril (450 mg/d). On day 21, all fingers—except the thumbs—were amputated at the proximal interphalangeal joints.

The final tissue diagnosis was leukocytoclastic vasculitis with initial Raynaud's phenomenon. It is our opinion that the prostaglandin E_1 was useful in the partial salvage of the thumbs. The value of prostaglandin E_1 in the treatment of Raynaud's phenomenon has been reported,[2] although results with iloprost appear to be superior.[3-5]

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Preventive medicine indoctrination must begin at undergraduate level

To the Editor:

The article "Emphasizing a preventive medicine orientation during primary care/family practice residency training," by Drs Inwald and Winters discusses an emerging, important theme in medical education. I think, however, that several points in the article are misleading and require further clarification.

First, with the exception of vaccination programs, evidence indicates that preventive medicine may *not* reduce total medical expenditures for a given condition. The analysis of costs and benefits for many illnesses is complex and must take into account many factors. Research[1] suggests that screening for a condition, such as hypertension, may actually add to the cost of treating patients with the disease. The critical issue is determining which incremental costs associated with prevention are acceptable in terms of the additional health benefits they provide.

Second, the article erroneously cites adult immunization as an example of "interventional health screening." Traditionally, preventive measures have been described as primary, secondary, and tertiary.[2] Immu-

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nization represents a classic example of primary prevention. Screening for early detection of disease is secondary prevention, and treating patients with established diseases to reduce mortality or disability represents tertiary prevention.

Third, the authors suggest that residents should be the primary focus of preventive medical education. This strategy would effectively relegate preventive medicine to a position of secondary importance in medical education. Preventive medicine concepts should be introduced early in the medical curriculum and continuously reinforced thereafter.

The US Centers for Disease Control and Prevention, in conjunction with the Association of Teachers of Preventive Medicine, has developed guidelines, *An Inventory of Knowledge and Skills Relating to Disease Prevention and Health Promotion,* for undergraduate medical students.[3] In short, these guidelines suggest that students should be exposed to preventive medicine concepts and role models in their formative years of medical education—not at its conclusion. Otherwise, physicians entering nonprimary care residency programs would likely receive little or no training in preventive medicine if none were provided in the undergraduate medical curriculum.

Finally, Drs Inwald and Winter's article implies that preventive medicine largely entails the knowledge and use of published guidelines for counseling and screening purposes. Although such activities certainly constitute good preventive practice measures, focusing solely on them obscures important principles, namely, the pretest and posttest likelihood of disease and the predictive value of screening tests,[4] as well as the methods used in establishing preventive medicine recommendations.[5] Emphasizing practice guidelines adds to the perception of "cookbook" medicine and deters the development of critical decision-making skills.

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Response

To the Editor:

We think that screening for certain major disease entities is still of primary importance as part of a preventive approach for any primary care practitioner. Granted, costs will be incurred for screening, diagnosing, and treating a patient with a disease. Nonetheless, we think that these costs will be insignificant compared to the patient's well-being, let alone preventing chronic illnesses that can have a major impact on the healthcare delivery system. We reiterate that preventing, screening, and treating major illnesses in their early stages will prevent any undue long-term chronic problems that require extensive healthcare dollar expenditures.

Preventive medicine *should* be taught at all levels of medical education, from the initial stages of medical school, right through the completion of the primary care residency program. Our article emphasizes that these concepts should be ingrained into the primary care physicians during the last several years of training, using different methods and concepts. We do not want to imply that the instruction in preventive medicine concepts should be relegated solely to the residency training. Rather, the initial foundation for primary care instruction should be laid during the undergraduate phase of medical education and continue on through the residency period.

Finally, we think that preventive medicine should not have a "cookbook" style approach. Rather, major guidelines should be given to physicians-in-training to be applied to their overall knowledge base. Yet these guidelines should allow for customization to each patients. Unfortunately, practice guideline diagnosis-related groups, and similar programs are being incorporated in future medical plans that clinicians must use. ♦

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