

distinction based on age is needed. We found that the distribution of pathogens (except *Pneumocystis carinii*) was not statistically different when patients ≥ 65 years of age were compared with younger adults. Consequently, our findings certainly reinforce the current ATS recommendation that empirical therapy should be modified according to age group only in cases of less-severe community-acquired pneumonia.

The mortality among patients with severe community-acquired pneumonia (SCAP) who require intubation reportedly ranges from 29% to 81% [3], and these patients present a unique set of therapeutic and diagnostic challenges. Despite these findings, Berk speculates on the causes of a "high death rate" (13 of 28; [2]) among elderly patients with severe pneumonia due to *Streptococcus pneumoniae*. Although therapy was not standardized in our multicenter study [2], only one patient with *S. pneumoniae* pneumonia received ceftazidime, and he recovered and was discharged from the intensive care unit.

Finally, the 1993 recommendations of the ATS for treatment of SCAP include the use of a macrolide plus an antipseudomonal cephalosporin or imipenem or ciprofloxacin [1]. I agree with Berk that ceftazidime (or ceftizoxime) should not be used as therapy for penicillin-resistant pneumococcal pneumonia. Given the current situation in Spain, the addition of erythromycin to a regimen of these cephalosporins may be of limited benefit because of the high frequency of erythromycin-resistant pneumococci.

Our results [2] emphasize that adequate coverage of pneumococci should not be abandoned in an effort to extend coverage for *Pseudomonas aeruginosa*. In my opinion, only selected patients with serious underlying conditions predisposing to infection with this microorganism would need such regimens. Indeed, our group and other investigators [4, 5] have previously reported that most patients with SCAP should be treated empirically with erythromycin plus cefotaxime, ceftriaxone, or a β -lactam/ β -lactamase inhibitor.

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Echo-Guided Diagnosis and Treatment of Hepatic Hydatid Cysts

SIR—We read with interest the article by Salama et al. [1], who reported that the safety and efficacy of radiology-guided drainage of hydatid cysts and injection of scolical agents have been demonstrated in a few cases. In our opinion, they have greatly underestimated the number of those cases since they did not cite several references that were published on this topic [2–5]. Indeed, more than 1,000 abdominal (mostly hepatic) hydatid cysts have thus far been treated with use of these methods. Moreover, these methods are gaining in popularity, as has been demonstrated by WHO (World Health Organization) recommendations and unpublished correspondence from colleagues; in addition, several reports on these methods will be presented in upcoming congresses. In fact, we have been designated by the WHO Informal Group on Echinococcosis to collect reports in this area from all researchers.

Salama et al. note that the "viability of the parasites by observation of flame cell activity and/or eosin exclusion was not determined." We believe that it is not sufficient to seek hydatid scolices microscopically only in unstained specimens and specimens stained with iodine and with hematoxylin and eosin (flame cell activity, vital, and supravital staining are required for a thorough examination). If only the procedures indicated by Salama et al. are used, a number of cases may not be properly diagnosed.

We have found that high pressure inside the hydatid cyst is not always an index of viability; in at least two of our cases, fluid gushed at puncture but there were no protoscolices. Therefore, we do not believe that high pressure is a completely reliable index of the viability of the cyst.

We believe that it is better to use a catheter than a needle to aspirate large cysts (> 7 cm in diameter); in this way, more material can be aspirated with greater ease. In addition, leaving the catheter in situ also allows one to check for protoscolices after reaspiration of the scolical agent and to repeat the injection if viable protoscolices are left in the cavity; the injection can be repeated until the protoscolices completely disappear.

Salama et al. do not mention determining the level of electrolytes in the fluid as a way to diagnose the possible parasitic nature of the cyst [6]. This is important because a parasitic cyst without scolices can be found at first aspiration, but if electrolyte determination is suggestive of hydatid fluid, the scolices are likely to appear in the reaspirated fluid after the first alcohol injection. Electrolyte determination should be part of the differential diagnosis, and this can be done only with use of PAIR. The acronym "PAIR" is derived from the steps involved in this procedure: *P* stands for *puncture* of the cyst under ultrasonographic guidance, *A* for *aspiration* of the hydatid fluid, *I* for *injection* of scolical agents into the cyst cavity, and *R* for *reaspiration* of the solution without drainage.

Salama et al. do not mention pre-PAIR endoscopic retrograde cholangiopancreatography (ERCP) and postaspiration roentgenography of the cyst with contrast to rule out possible connections of the cyst with the biliary tree. In fact, if connections with the

biliary tree are discovered by ERCP, the patient does not have to undergo PAIR; looking for bile-stained fluid in the cysts is not enough because some connections with the biliary tree appear only after partial collapse of the cysts. This is why we also perform roentgenography of the cyst after the first aspiration of the fluid.

With regard to hypertonic saline vs. alcohol as scolical agents for the treatment of hepatic hydatid cysts, it is still difficult to say which is preferred. First, saline can induce chemical cholangitis just like alcohol when there is a connection with the biliary tree. Second, Salama et al. quote Giorgio et al. to support their opinion that saline is safer than alcohol; however, Giorgio et al. do not aspirate alcohol after injection but instead leave it inside the cyst cavity [7]. We believe that this procedure is both useless and risky since alcohol is known to kill cells—and, in our experience, scolices—after 3 minutes of contact [8].

Salama et al. do not mention whether they determined titers of antibodies to *Echinococcus granulosus* during follow-up of their patients. Although it is still unclear which serological tests should be performed during follow-up of patients with hepatic hydatid cysts, recent studies indicate that patients who are clinically cured are much more likely to have a gradual decrease in immunologic response than are those who are still infected [9]. Serology should be performed during follow-up of these patients.

Follow-up of patients with hepatic hydatid cysts should include CT as well as ultrasonography. It is important to rule out hydatid cysts in extraabdominal sites that can occur as secondary echinococcosis years after PAIR is performed to ensure the safety of this procedure.

It is not clear why Salama et al. did not continue prophylaxis with albendazole after the first eight patients were treated; this is indeed a risky policy, especially when the two most important complications of PAIR and the main reasons for opposition to this procedure are the risk of anaphylaxis and spillage of hydatid fluid into the peritoneum. Although no case of peritoneal dissemination has been reported so far (some of our patients have been followed up as long as 8 years), at least one case of reversible anaphylactic shock after PAIR has been reported (by Bastid et al. [4]). Therefore, it is necessary to insure that this procedure is performed in the safest manner possible.

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Reply

SIR—I truly appreciate the remarks by Drs. Filice and Brunetti, and in principle we agree with them. Our paper was published as a short clinical article, and thus we were limited—and wished to limit ourselves—to only a few references that were readily available to those interested in reading further about the subject. The first author, Dr. Hosny Salama, has notable skills in both abdominal ultrasonography and in needle aspiration of the liver; these skills were used to treat patients with hepatic hydatid cysts.

Salama et al. showed that the PAIR technique was effective and safe in experienced and skilled hands in the outpatient setting and that it was suitable for managing patients with hepatic hydatid cysts in developing countries. Your recommendations are appropriate for the University of Pavia and would have been useful, although markedly increasing the cost and lengthening the procedure, in his clinic in Cairo. You recommend additional procedures that include testing of the removed hydatid fluid, use of a catheter to drain large cysts, endoscopic retrograde cholangiopancreatography, and cystography for better visualization before and after drainage. You also recommend serology as part of the follow-up and prophylaxis with albendazole (I assume).

These procedures, however, could not give better results than those obtained by Salama et al. He used hypertonic saline instead of alcohol as the scolecidal agent because it was readily available and because limited evidence suggested that it might be safer than alcohol. His patients were not treated with albendazole because they could not afford to purchase it and because it was not readily available on the local market. However, we recommended this drug be given in the discussion section of our paper.

There has been considerable and harsh resistance to closed needle drainage of hydatid cysts from some experts. A recent review of the treatment of parasitic diseases still considers surgical removal as standard therapy for hydatid cysts, although it mentions that percutaneous drainage combined with albendazole therapy “has been successfully used to treat hepatic hydatid cysts” [1]. Therefore, your comments are appreciated and you are urged to publish your extensive experience in peer-reviewed medical jour-