The Potential Danger of Empiric Antimicrobial Therapy for Nosocomial SBP

Dear Sirs

Piano et al's suggestion in their study of empiric treatment of nosocomial spontaneous bacterial peritonitis (SBP) that these antibiotics of last resort should become standard in areas with high multi drug-resistant bacteria is potentially dangerous.[1] We agree with the editorial that nosocomial SBP represents a worryingly evidence-free zone with few prospective studies and opinion based guidelines – in turn making this study capable of considerable impact for policy.[2] One size definitely does not fit all, but we would go further to state that the challenge of antimicrobial resistance requires a more thoughtful approach, rather than automatic deployment of broad spectrum antibiotics.[3] Italy has high cephalosporin and carbapenem resistance rates, with some organisms exceeding 50% resistance and fluoroquinolone-based antibiotic prophylaxis may drive this.[4] Therefore it would be both incorrect and irresponsible to advocate such a combination in countries with lower resistance.

This study relies on surrogate markers of infection and resolution with no difference in survival. Although a polymorphonuclear cell (PMNC) count >250 /mm^3 demonstrated 100% sensitivity and 89% specificity in culture positive SBP, Piano et al isolated bacteria in 51.6% patients in line with others.[3, 5] This was greater in the ceftazidime group (62.5% vs 40%). Patients with positive cultures have significantly worse outcomes and this confounder was not considered. Patients with a PMNC count >250/mm^3 will be treated with antibiotics in many countries regardless of culture results; we could be treating half of these people unnecessarily. Greater attempts should be made to understand the characteristics of patients with negative ascitic culture and elevated PMNCs. In particular can antibiotics be stopped?

The key finding is efficacy of first-line treatment independently predicted survival and it therefore follows that we must focus on delivering the correct antibiotics to the correct patients. We believe that adoption of their recommendations for empiric antibiotics will lead to further antibiotic pressure, both in terms of spectrum and treatment duration. Neither is necessary; many patients may not need antibiotics in the first place, and rapid de-escalation flowing from antibiotic sensitivity data should be the rule. There is no choice; to continue to deploy increasingly precious antibiotics without thought for alternative strategies will fail, and patients will die for lack of effective therapy. This paper's value lies therefore in its potential to stimulate multi-centre studies and strategies to improve antibiotic use before we lose them altogether.

References

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