Antimicrobial Resistance in ICU: An Avalanche in Waiting!

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The term antimicrobial stewardship has become fashionable and is perhaps too widely used. Stewardship means preserving something that is precious and fragile. Antimicrobials are certainly precious because they save lives and are fragile because organisms readily develop resistance to them. This is in direct proportion to the extent of use.

Nosocomial infections due to gram negative organisms are a major cause of increased morbidity and mortality in our ICU patients.¹,² Management of these infections is often based on “Hit Hard, Hit Fast” principle. Implementation of this practice requires an ongoing surveillance of susceptibility data of clinical pathogens and also to some extent of the colonizing flora. These susceptibility patterns can be used to inform clinicians to take appropriate decisions which may range from initial selection, optimizing drug dose and de-escalation. This can also be used for isolation of selected patients and to enhance infection control.

Data such as provided by Khety et al is therefore an important step in this direction. However, there are important limitations of this study and issues with the conclusions.

Separate analysis of inpatients, outpatients, neonatal, surgical, medical ICU patients may be useful.³ Exclusion of colonizing flora and perhaps a subgroup analysis of colonizing flora susceptibility will be useful. The data on staphylococcus aureus susceptibilities, does not include data on methicillin/cefoxin susceptibilities, which is most important in guiding therapy. For MRSA, it is desirable to know Vancomycin MIC. The most difficult task is management of MDR Gram negative organisms and drugs like Polymxins and Fosfomycin should be reserved for these infections.

Continuous data gathering and analysis helps. Such studies need to be done and published on a continuing basis because they tell us where we are and in which direction we are going.⁴,⁵ Knowing resistance trends helps in assessing the impact of the newly introduced as well as older antimicrobials. It can help formulate guidelines which may achieve the dual objective of maximizing the outcome for an individual patient and minimizing the collateral damage to our microbial environment.

We wish to remind ourselves that obtaining data is only one part of a comprehensive infection management bundle.⁶ To be successful, these data need to be acted upon. The crucial action expected from the clinician is rational selection, de-escalation, termination of treatment as well as scrupulous attention to infection control. These stewardship principles need to penetrate from tertiary to secondary, primary centers for any significant impact on the galloping rise in gram negative resistance.

References


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