

## Superbugs and we intensivists: A time for introspection....

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Friends, if you are not in the habit of reading unexciting and dry editorials, please feel free to skip these pages. You may find the article on Multidrug Resistant Acinetobacter Infections in Intensive Care Units, written by a team of young doctors from SGPGI, Lucknow more interesting and worth spending time on.<sup>[1]</sup> There may not be any ground breaking research or results, but the paper will give you a *deja vu* feeling, making you realize that you have seen this a hundred times before and could not spend enough time or take efforts to compile the data like the authors of this paper have successfully done.

Sweeping bugs under the carpet has always been a time tested and highly effective method to tackle resistant bacteria in many Indian hospitals. We are scared to disclose our data. We are afraid of patients, their relatives, media, and above all the hospital on the other side of the road.

Multidrug resistant (MDR) gram negative bacteria are literally haunting hospitals in our country and our subcontinent. Inadequate infection control facilities in most of our hospitals, due to lack of resources, ignorance about the gravity of the situation or the obvious neglect to follow precautions even in resource rich tertiary care centers, provide a perfect breeding ground for these superbugs. Mediterranean countries, where antibiotic usage is as rampant and unregulated as in India also have reported high MDR gram negative rates. Larger population and the ensuing huge bacterial biomass in Indian subcontinent make the Mediterranean problem look miniscule in magnitude if not in the clinical spectrum and severity.

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Acinetobacter is a nonfermenter and thus an environmental bug unlike the gut-loving Enterobacteriaceae. Acinetobacter is so sticky that once it colonizes the intensive care units, you have to generate a nuclear explosion to get rid of it! If you do not have access or willingness for such extreme measures, contemplate stripping the floor open, bringing the walls down and reconstructing the ceiling. None of us favor the idea of closing our units down. Fumigating the unit, repainting the wall with a fascinating color, hanging a no entry board for bugs, installing air purifier machines, and frightening bugs away with white coats are alternative methods worth experimenting but guaranteed not to succeed. Softhearted intensivists and infection control doctors, including the editorialist prefer these easy, less troublesome methods. I bet none of us, with our amiable methods, could ever have succeeded in keeping these bugs away for long.

High mortality rate in patients infected with MDR Acinetobacter is not surprising at all. Fighting a war using weak arsenal of one or two partially effective antibiotics against the mightiest bacterial army cannot be expected to produce any astonishing and brilliant outcomes! Tigecycline is not even licensed for treatment of ventilator associated pneumonia (VAP). In my practice and that of many readers, commonest use of this drug will exactly be for the above mentioned indication mostly

in combination with colistin, another drug, whatever said and done, having widely varying results of efficacy in VAP.<sup>[2]</sup>

Combination therapy is the flavor of the day! Colistin monotherapy is proven to induce heteroresistant population of bacteria, which may overgrow when their sensitive counterparts are terminated by the drug. Combination therapy is recommended to prevent this phenomenon. Till recently I sincerely believed that this may be part of another shrewd propaganda by pharmaceutical industry to sell more and more of their antibiotics. Anyway, evidence is accumulating, though weakly and slowly, odds favoring the combination ideology.<sup>[3]</sup> This is a paradox, when high-end antibiotics are used in double and triple combinations against MDR and extensively drug resistant (XDR) Gram negative superbugs, in an era where restriction of these precious drugs should have been the ideal strategy. The days we used to treat severe infections with a single effective drug will shortly be a story of the past, if the skyrocketing resistance rate continues unabated.

Ten percent of carbapenem resistant *Acinetobacter* in the study population were pandrug resistant. Talking about pan resistance, nowadays we may not experience the same adrenalin surge we all used to have until a few years ago.<sup>[4]</sup> Familiarity breeds contempt! Contempt leads to neglect!!

Majority of XDR *Acinetobacter* isolates in the study patients were sensitive to  $\beta$ -lactam -  $\beta$ -lactamase inhibitor (BL-BLI) combination (probably a sulbactam containing combination). Though not Food and Drug Administration (FDA) licensed, many of these so called unconventional combinations are ideal carbapenem sparing agents. It is time to make and believe our own data. Our bugs are different and their response to antibiotics should not be predicted based on what we read in western textbooks.

Criticism is easy; providing a solution may be hard. We do not have to delve deep into any western medical society's website for a solution. We ourselves have found an answer to our problem. "Chennai Declaration" recommendations are prepared by medical societies in India, tailored to Indian needs, providing practical and implementable proposals.<sup>[5]</sup> Indian Society of Critical Care Medicine (ISCCM) has made significant contribution towards preparation of this document. The declaration has been widely reviewed in many international medical journals, discussed in reputed international and national conferences, and now our Ministry of Health has decided to implement the recommendations in the form of a National Antibiotic Policy. Finally, there is some light at the end of the tunnel. We have learned from our own mistakes.

That fungal spore which fell upon Alexander Fleming's culture plate changed the history and destiny of mankind! Penicillin is a gift from God to the miserable human race. Let us preserve antibiotics for our future generations!

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