

## **A Call to action: For the attention of oncologists!**

Did you ever have a patient with Klebsiella in blood and only colistin worked? Did you ever have her back with the same bug in blood, this time, colistin being marked resistant? And no other wonder drug in the list to scribble on that drug chart! Did you stare at the wall and then at the face of your dear patient, her being just twenty two, with no neutrophil in blood, all of them wiped out by the chemo she received for her over smart white cells?

Have you ever thought of practicing oncology without the back up of a group of drugs called antibiotics? Will you have guts to give chemo drugs when bugs will be freaking out with no respect of anything what's so ever? Would you like to ablate the marrow of a kid with the hope of giving him a new one, when you know the bugs are going to take him, if you don't help him out with that wonder drug the mastermind himself delivered to you through a human being called Alexander Fleming?

The Wonder of Modern Medicine, where a patient can have a new liver when his liver fails, new set of white cells when his own ones go mad, a grossly premature new born given an opportunity to live, when god himself was in

too much of a hurry to bring him to this world; will come to a standstill at least for a span of a few years, until the antibiotic free period is over.

Introduction of penicillin changed the way how the modern medicine was being practiced, life became more dignified and civilization more pristine. Now, an unexpected scenario is being unveiled. We have run out of antibiotics. Hundreds or even thousands of patients across the globe are surviving sepsis caused by carbapenem-resistant bacteria due the presence of one antibiotic, Colistin. It is only a matter of time when this scenario reaches colossal proportions. Resistance to Colistin, an old antibiotic, brought back to clinical practice as a result of increase in multidrug resistance bacteria, is being reported from many countries. We can call these pan drug resistant bugs with the pet name of super-super bugs. More and more bacteria will acquire this status over the next few months. In a few years time, in many countries, especially Indian subcontinent and Mediterranean region, where the prevalence of Gram negative resistant bugs are higher; Pan-resistant bacteria will become a norm rather than an exception. Other regions will also catch up with, only the severity of the problem and the duration of antibiotics-free period will vary.

In fact, international experts and even WHO predicted the possibility of this scenario a decade ago, and a movement to tackle the situation was initiated by WHO at that time. Unfortunately, the efforts didn't materialize. Ten years after; the prediction has turned to be a reality.<sup>[1,2]</sup> The prospect of an antibiotic-free world is imminent.

How did we end up in such a situation? Pharmaceutical companies consider investment in antibiotics not rewarding. Antibiotics belong to a special class of drugs that become ineffective within a few years of marketing, and antibiotics policies advocate restricted use of new broad spectrum antibiotics; in effect reducing their sale and profitability. This is in contrast to other group of drugs like anti-diabetics and anti-cholesterol drugs, which never become resistant and nobody will advocate their restricted usage. Antibiotics cure an infection, unlike a diabetic or cholesterol drug expected to be consumed lifelong. Unrestricted use of antibiotics increased the resistance rate at a time when no new antibiotics are available or expected in the pipeline.<sup>[3]</sup> Modern medicine advanced so fast, we

could decode human genome, opening infinite possibilities of genomics and proteonomics. What we failed to notice was the shaking foundation of medical science, antibiotics being the concrete and bricks and everything else just sand mud.

This is not the time for an autopsy. This is not the time to dig deep to find who the good Samaritans and who the bad ones are. This is the time to look forward to save whatever antibiotics are left, to reduce the duration of antibiotics-free period. Let us think twice before prescribing an antibiotic. Let us wash our hands or clean it with alcohol before and after patient contact, follow barrier precautions while treating patients colonized or infected with multidrug-resistant organisms. Let us be the leaders in propagating the message on proper antibiotic usage and infection control. Let us not be the passive audience of the drama. Let us be the players, we all on one side and our enemy, the bugs on the other side of the ground. The future of cancer patients and our professional career depend on how well we reduce this period of antibiotic famine and implore master creator to show us a miracle, one very similar to the fungal spore he deposited on Alexander Fleming's culture plate in 1928.

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