EDITORIAL

DEALING WITH THE HOSPITAL ACQUIRED INFECTIONS

In the medical school or early in the medical profession the famous dictum of Florence Nightingale that, "A hospital should do no harm to a patient", is little difficult to comprehend. But after having worked for some years in the hospitals things get clearer. Health care associated infections (HCAIs) are now a well established problem throughout the world and more so in the developing countries, where the prevalence may be as high as 15.5%[1].

Within the hospital settings a patient is prone to a number of and a variety of infections, depending upon the device or the instrument he/she is exposed to. They usually range from an intravenous line, a urinary catheter or a ventilator associated infection. This is in addition to the surgical site itself and the antibiotic associated diarrhea.

What could be worse for a treating physician, holding a bacterial culture report in hands and thinking hard that, whether this organism isolated is the cause of the patient's problem or just a colonizer or a contaminant. Over the years the clinical isolates from hospital wards in general and the ICUs in particular have seen emergence of some very deadly pathogens. These include the methicillin resistant *Staphylococcus aureus* (MRSA), methicillin resistant *Staphylococcus epidermidis* (MRSE), vancomycin resistant enterococci (VRE), *Acinetobacter species*, the extended spectrum beta lactamase (ESBL) producing enterobacteriacae, the carbapenemase producing enterobacteriacae (CRE) and *Clostridium difficile*. Most of them are on a journey from multi drug resistance to pan resistance, with the capability to render any antibiotic ineffective. Given the benefit of doubt it is the patient who receives the antibiotic putting tremendous pressure either on him/her or the health care system. Acceptable absolutely as long as it eradicates the organism and treats the patient but what about the colonizers and contaminants?

Hand hygiene was recognized as the single most important factor in the prevention of these infections and with time this practice is being adhered to more and more in our clinical settings. The next most important step from a microbiological point is the proper collection of a clinical sample submitted for culture. Unfortunately this still does not get the attention it warrants and mostly it is delegated to the junior most staff, with minimal training, in the wards and the ICUs. Most of them are not even in knowledge of a normal skin flora, what to talk of bacterial colonization.

The microbiology culture reports may be frustrating at times, but the matter needs perseverance. It is to be understood that only these results form the basis of empirical treatment of patients in a given hospital, community, city or a country. Also it has to be a continuous practice in order to study the changing trends in the antimicrobial resistance.

The only solution is the training of the staff, be it the nursing staff or the doctors, in proper collection of clinical samples. The areas which need immediate attention are hand hygiene of the person collecting a sample, skin antisepsis, understanding the difference between sputum and saliva and submitting those parts of the intravenous lines or urinary catheters which were inside the patient's body. This is in addition to remembering the basics of sample collection like avoiding contamination from adjacent tissues and secretions, observing optimal timings, e.g. obtaining a sample prior to administration of antibiotics whenever possible, collecting sufficient quantity, e.g. pus is always better than a pus swab, minimizing the transit time to the laboratory and using a good antiseptic for asepsis of skin like, 70-90% alcohol, 2% chlorhexidine or 2% tincture of Iodine[2]. Effective communication between the clinicians and the microbiologists will address most of these issues.

Equally important is training of the laboratory staff particularly in sterility of the culture media used and other procedures, in order to ensure that whatever grows on a medium is from the patient's sample and not from the laboratory.

As doctors we are all familiar with the immense pleasure of diagnosing a patient provisionally, confirming it with investigations, treating him scientifically and watch him return to life on his feet - indeed with no harm done to him in the hospital.

REFERENCES

1. Allegranzi B, Bagheri Nejjad S, Combescure C, Graafmans W, Attar H, Donalson L et al. Burden of endemic health-care-associated infection in developing aountries: Systemic review and meta-analysis. Lancet 2011; 377 (9761): 228-41.
2. John Hopkins Medical Microbiology Specimen Collection Guidelines updated 6 / 2013.

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