EDITORIAL

New Delhi Metallo (Beta-Lactamase 1):Fact or Fiction

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A recent report published in Lancet Aug, 2010 that Gram-negative enterobacteriaceae with resistance to carbapenem conferred by New Delhi metallo-beta- lactamase 1 (NDM-1) is potentially a major global health problem and co-ordinated international surveillance is needed (1).Controversial lines in the article, in context to India, with potential to affect medical tourism in India,which generated conflict of Interest were as follows: "*Several of the UK source patients had undergone elective, including cosmetic, surgery while visiting India or Pakistan. India also provides cosmetic surgery for other Europeans & Americans & blaNDM-1 will likely spread worldwide. It is disturbing, in context, to read calls in the popular press for UK patients to opt for corrective surgery in India with the aim of saving the NHS money. Such a proposal might ultimately cost the NHS substantially more than the short-term saving thus we strongly advise against such proposals. The potential for wider international spread of producers and for NDM-1-encoding plasmids to become endemic worldwide, is clear and frightening*" (1).

The controversy regarding associated name "New Delhi" to it - New Delhi metallo-beta- lactamase 1 (NDM-1) started its journey from the first report of its presence in a 59-year-old male patient who was originally from India but living in Sweden for many years and who often returned to India had type 2 DM & multiple strokes. In November 2007, he travelled to India & on 5th December was hospitalized in ludhiana, punjab, with a large gluteal abscess. In December 2007, he was admitted to a hospital in New Dehli, where he was again operated on and where he developed a decubital ulcer. On 8th January 2008 he was referred to Sweden. During his stay in New Dehli he received amoxicillin (amoxicilline)-clavulanic acid, metronidazole, amikacin, and gatifloxacin (all of them parenterally). Clinical isolate K. pneumoniae 05-506 was derived from a urinary culture on 9th January 2008.Therafter , it become for the first time evident that patient acquired a urinary tract infection caused by a carbapenem-resistant Klebsiella pneumoniae strain that typed to the sequence type 14 complex. The isolate, Klebsiella pneumoniae 05-506, was shown to possess a metallo-lactamase (MBL) but was negative for previously known MBL genes (2).

Controversy remains regarding the presence of DM & multiple strokes raising possibility that these comorbid conditions may have contributed toward resistance.Sponsored nature of lancet report make it further suspicious of the western interest to curb medical tourism in India and generate companies own avenues to develop and market new drugs for it.Moreover,the growing increase in the rates of antibiotic resistance is a major cause for concern in both nonfermenting bacilli and isolates of the Enterobacteriaceae family world wide & not restricted to India only. Carbapenemases are increasingly being reported; and the most prevalent of these would appear to be KPC, which has recently been characterized in the United States, Israel, Turkey, China, the United Kingdom and Nordic countries also (2).

However, it is our moral duty to draw attention of medical fraternity that in the report published in Lancet (1), many authors are of Indian origin.Moreover, this is not the first report. The first report actually appeared in JAPI (3), a reputed Indian journal in March, 2010, raising same concerns but since Lancet is one of the high impact journal, so it succeeded in drawing attention world wide including media.

Message to whole medical fraternity is that, it is high time to recognize, foresee & anticipate the problem related to non judicious use of antibiotic, in form of emergence of many such antibiotic resistant plasmids. This is not only going to affect community health, clinical practice but also going to have great impact on countries economy by affecting medical tourism in universal way. Let us identify our role to prevent world wide prevalent problem ie."*Antibiotic Resistance*". Central & State Govt. should formulate core central committee & regional committee to work & formulate antibiotic policy as per the regional requirement & sensitivity/resistance trends.

References

1. Kumarasamy KK, Toleman MA, Walsh TR *et al*. Emergence of a New Antibiotic Resistance Mechanism in India, Pakistan, and the UK: A Molecular, Biological, and Epidemiological Study.*Lancet Infect Dis* 2010 ; 10(9): 597-602
2. Yong D, Toleman MA, Giske CG *et al*. Characterization of A New Metallo Beta-Lactamase Gene, Blandm-1, and A Novel Erythromycin Esterase Gene Carried on a Unique Genetic Structure in Klebsiella Pneumoniae Sequence Type 14 From India. *Antimicrobiol Agents Chemotherapy* 2009; 53(12): 5046-54
3. Deshpande P, Rodrigues C, Shetty A *et al*. New Delhi Metallo-B Lactamase (NDM-1) Inenterobacteriaceae: Treatment Options With Carbapenems Compromised. *JAPI* 2010; 58:147-49

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