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Colistin's dark face: The revival of polymyxin antibiotics

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Background & Objectives: Colistin (polymyxin E), an old antibiotic replaced by other less toxic antibiotics in the 1970s has been increasingly used over the last decade due to multidrug resistance in Gram-negative bacteria and lack of new antibiotics. However there is a dearth of information on the pharmacodynamics and toxicodynamics of colistin and its non-active prodrug colistimethate sodium (CMS). Optimized dose regimens have not been establishment for different types of patients, especially in the critically ill population.

Material & Methods: Recent reports have not described neurotoxicity associated with intravenous CMS with the exception of cases in the cystic fibrosis population, among whom neurotoxicity has manifested as paraesthesias and ataxia in 29% of patients treated (dosages in excess of 5 mg/kg per day). Our patient received intravenous CMS dosages 6 mg/kg per day. Only one case according most recent literature has described a profound encephalopathy with lack of brainstem reflexes in postsurgical patient. We report a 56 year old man who developed renal, hematological and neurotoxicity on the 5 day after administration endovenous colistin and cefepima (CMS dosages of 160 mg/8 hours, equivalent to approximately 6 mg/Kg per day). The patient has made perforated diverticulitis with descending colon resection and end colostomy left flank. On day 6 post-surgery nosocomial pneumonia by *Pseudomona aeruginosa* MR sensible to colistin was diagnosed.

Results: Electroencephalogram was compatible with severe encephalopathy. Peripheral eosinophil count had increased to 12%. He recovered promptly after stopping the drug.

Conclusions: The awareness of colistin's potentially fatal effects must be kept in mind when using. Vigilance of the encephalopathic picture can also facilitate the diagnosis of colistin mediated neurotoxicity in a patient with altered mental status of otherwise unknown aetiology. In our opinion, the establishment of any relationships between the daily dosage of CMS, colistin levels and neurological events is needed, especially in the critically post-surgical ill patient population.

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The influence of IL-10 gene polymorphisms on the susceptibility to hepatitis B virus infection: A meta-analysis

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Interleukin 10 (IL-10) is a cytokine with anti-inflammatory functions. The results of different studies vary in the roles of the IL-10 SNPs in the susceptibility to the hepatitis B virus infection. In particular, the -1082 A/G, -819 C/T and -592 A/C polymorphisms have most often been implicated. We have performed a meta-analysis including 31 case-control studies to summarize the data on the association between IL-10 SNPs and susceptibility to HBV infection. All the relevant studies in NCBI PubMed, EMBASE, Medline and Web of Science were searched and poor qualified studies were excluded. 31 studies were included. Data are presented as the odds ratio (OR) with a 95% confidence interval (CI). Investigation of heterogeneity among individual studies and the publication bias were also evaluated. This study revealed a significant association between the IL-10-89 C/T polymorphism and HBV infection susceptibility in the Asian population. Our results indicated that the presence of the IL-10 -819 C allele significantly increased the risk for persistent HBV infection. In our meta-analysis, sensitivity analysis showed that the combined result was not associated with the worldwide population. In contrast, the IL-10 -1082 A/G and -592 A/C polymorphisms were not associated with an increased susceptibility to HBV infection. Our meta-analysis supports the growing body of evidence that the presence of the IL-10-819 C/T SNP is associated with persistent HBV infection in Asians. In addition, IL-10-819 C/T polymorphism might be a risk factor for HBV in Asians but not in Europeans.

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