

Ceftazidime may have immunomodulatory action

Ceftazidime may have immunomodulatory activity independent of its antimicrobial activity, according to researchers from the US.

Their study included 40 patients admitted to the trauma intensive care unit, who were expected to require ≥ 7 days of mechanical ventilation and were at high risk of developing ventilator-associated pneumonia (VAP).^{*} Patients were randomised to receive prophylactic aerosolised ceftazidime ['Fortaz'] 250mg (n = 20) or placebo, twice daily for 7 days.

Significantly fewer ceftazidime-treated patients developed VAP, compared with placebo recipients. However, bacterial flora and sensitivity patterns were not adversely affected by ceftazidime. Bronchoalveolar lavage demonstrated that ceftazidime treatment induced a significant reduction from baseline in the levels of tumour necrosis factor (TNF)- α , interleukin (IL)-1 β , and IL-8, but not IL-6. Further analysis revealed that increases in TNF- α and IL-1 β levels were significant predictors of VAP.

'Antibiotics may have advantageous immunomodulatory effects independent of antimicrobial activity', comment the researchers. However, they do not rule out the possibility that *'the antimicrobial effect of ceftazidime did not allow bacterial growth and subsequent activation of the proinflammatory cascade'*.

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Wood GC, et al. Aerosolized ceftazidime for prevention of ventilator-associated pneumonia and drug effects on the proinflammatory response in critically ill trauma patients. *Pharmacotherapy* 22: 972-982, Aug 2002 800916649