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Lung alert

Mannose-binding lectin deficiency increases mortality risk from pneumococcal infection

Low serum levels or genotypic variants of the innate immune molecule mannose-binding lectin (MBL) have been associated with increased susceptibility to infectious diseases. Few studies of MBL have included sufficiently large sample sizes and conclusions drawn have been conflicting. This study set out to reanalyse existing data from studies on MBL in order to define the serum level of MBL deficiency and determine the risk of death from sepsis due to this deficiency.

To initially define the serum concentration of MBL deficiency, data on 1642 healthy patients from four out of a possible seven studies was reassessed. An MBL serum concentration of <0.50 μg/ml was found to be predictive of low producing *MBL2* genotypes. Data from six further studies on the association between MBL deficiency and bacterial infection or septicaemia were subsequently reanalysed; 477 heterogeneous patients, with infections ranging from pneumococcal sepsis to undefined septic shock, were included. A serum MBL concentration below this cut-off value within 48 h of admission was associated with an increased likelihood of death in patients with severe bacterial infections. However, even among survivors, 30% exhibited serum levels consistent with MBL deficiency. In a separate analysis of patients with severe pneumococcal infection, those with MBL deficiency showed an increased risk of death following adjustment for bacteraemia and co-morbidity.

This study helps delineate a serum level for MBL deficiency and suggests that MBL-deficient patients with severe pneumococcal infection may be an important target for supplementation therapy in the future. However, even this meta-analysis is not without its limitations. The population included is very heterogeneous and different MBL testing methodologies were used in different studies. Nonetheless, as recombinant human MBL replacement therapy is being developed, having an agreed level for replacement and concurrence on what is MBL deficiency is important.

► Eisen DP, Dean MM, Boermeester MA, *et al*. Low serum mannose-binding lectin level increases the risk of death due to pneumococcal infection. *Clin Infect Dis* 2008;**47**:510–6

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