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Title: Lower respiratory tract infections in haematologic patients with and without stemcell transplantation

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Body: Pulmonary complications are frequent in haematologic patients undergoing chemotherapy or stemcell transplantation. We analysed the diagnostic yield of bronchoscopy with BAL in haematologic patients suffering from symptoms of LRT infection. The assessment of BAL fluid included bacterial/ fungal culture, staining and PCR for mycobacteria, immunohistochemistry for pneumocystis, multiplex viral PCR and cell differentiation. 355 haematologic patients underwent diagnostic bronchoscopy with BAL from October 2009 to January 2012. In 50 cases the patients received high dose chemotherapy, 225 underwent allogenic and 18 autologous stemcell transplantation. 100 patients suffered from fever, 183 from cough and 200 showed an infiltrate on chest CT scan. Bacteria were cultured from 61 BAL fluids: streptococcus pneumoniae (11), staphylococcus aureus (7), pseudomonas aeruginosa (3), enterococcus (9), moraxella (2), enterobacteriaceae (4), mycoplasma pneumoniae (2), mycoplasma hominis (1), stenotrophomonas maltophilia (2), haemophilus influenzae (4), legionella pneumophila (1). There were 4 cases of pneumocystis jirovecii. In 4 patients we found atypical mycobacteria. Aspergillus species were cultured in 13 cases. In 41.7% viruses were documented. Most often we found rhinovirus (54), followed by CMV (32), HSV (24), parainfluenza (16), RSV (15), human metapneumovirus (13), coronavirus (12), adenovirus (8), EBV and H1N1 (each 4). Summary and Conclusion: The incidence of viral infection is very high in patients with pulmonary symptoms and haematological underlying diseases. We recommend to perform BAL with multiplex viral PCR in these patients instead of empiric antibiotic treatment.