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Early predictors of outcome and management of PCP in Glasgow: 11 years experience in the post-antiretroviral era

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Purpose of the study

Despite the introduction of HAART, *Pneumocystis jirovecii* pneumonia (PCP) remains an important cause of morbidity and mortality associated with HIV. This study describes the treatment, mortality rate and predictors of severity of PCP in the Glasgow HIV cohort since the introduction of HAART.

Methods

A retrospective case review of all HIV-associated PCP episodes occurring between January 1997 and July 2008 within the greater Glasgow area was undertaken. Outcome measures of severity were admission to the intensive care or high dependency unit or death.

Summary of results

There were 69 episodes of PCP over the 11-year period. The median age was 37 years, (range 15–66). The median CD4 count was 30.5 (range 1–244). In 78% of cases PCP was the presenting illness of HIV. Mortality was 8% by 28 days rising to 10% by 90 days. 16% of cases necessitated admission to the high dependency or intensive care unit. Multivariate analysis identified factors associated with poor outcome as being a higher baseline urea (adjusted odds ratio [AOR] 1.72; 95% CI 1.13–2.61; p = 0.011), a higher white cell count (AOR 1.56; 95% CI 1.10–2.21; p = 0.012 and a lower CD4 (AOR 0.93; 95%CI 0.87–0.99; p = 0.05). Likelihood of admission to ITU or HDU was not associated with prior cotrimoxazole prophylaxis, smoking, any comorbidity, time since HIV diagnosis or SAPSII score. 100% of those who did require admission to ITU or HDU had a pO2 on admission of 8 or less on air compared to only 54.14% of those who did not (p = 0.02) 74% of cases received high dose intravenous (IV) cotrimoxazole as first-line therapy with 20% receiving oral cotrimoxazole from admission. There was no relationship between admission SAPSII score, any admission blood parameter or prior cotrimoxazole prohylaxis with the decision to give oral or IV cotrimoxazole. 70% of cases received corticosteroids. Multivariate analysis identified factors associated with giving corticosteroids as being prior cotrimoxazole prophylaxis (AOR 0.03; 95% CI 0.001–0.71; p = 0.029), lower pO2 breathing room air (AOR 0.06; 95% CI 0.01–0.38; p = 0.003). Of those individuals antiretroviral naive, the median time from diagnosis of PCP to commencing ARV medication was 18 days (95% CI 14.5–23.4).

Conclusion

The majority of cases of PCP occur in the context of a new HIV diagnosis. Risk factors for poor outcome can be identified at admission and treatment decisions are influenced by severity of illness and prior treatment.