



Ricart, Javier¹; Sánchez Cunto, Milagro¹; Chediack, Viviana²; Domínguez, Cecilia²; Gregori Sabelli, Rosana²; Cortez, Emilce²; Fernández, José²; Velásquez López, Pablo²; Cáceres, Susana²; Cunto, Eleonora²
 Infectious Hospital F J Muñiz, Infectious¹, Intensive Care Unit², Buenos Aires, Argentina

Purpose

Pneumocystis jirovecii pneumonia (PJP) has historically been one of the leading causes of disease among persons with Aids. The introduction of highly active antiretroviral therapy has brought about dramatic declines in the incidence of Aids-associated complications. However, HIV-infected patients (HIP) who ignore their HIV status or those without viral suppression, may develop PJP and require admission to an intensive care unit (ICU), with a mortality rate of ICU HIV patients with PJP can still be up to 60% (1,2). Our aims are to describe clinical characteristics of patients with proven Aids-related PJP and determine factors related with mortality

Methods and Materials

This is a retrospective observational study conducted in a clinical cohort of patients with HIV-1/Aids. Among 1122 HIP admitted to ICU of an Infectious Diseases Hospital in Buenos Aires city between 2006 and 2016, 63 had PJP, verified by microbiological (Figure 1 and 2), clinical or/and radiological suspicion (Figure 3 and 4). Clinical features, radiological and laboratory investigations and outcomes were reviewed by medical records. Univariate analysis was performed to identify factors related to death. We performed descriptive statistics on percentage (%), median, mean and range. A p value of <0.05 was considered significant.

Results

The PJP incidence rate in the group studied was estimated at 0,056. The mean/median age were 37/40 (range: 14-76) years. A male predominance (65%) was observed. The median duration of length of ICU stay was 4 days (range: 1-57). 57% had evolved to Aids for more than a year. 92% cases occurred with cell count CD4+ less than 100 cells/ μ L with a mean of 52. Only one patient had more than 200 CD4+. 90% did not receive highly active antiretroviral therapy. 75% presented weight loss >10% during the last 6 months, Karnofsky scale <50 or hypoalbuminemia < 2,6 g/L. 70% presented diffuse bilateral interstitial infiltrates on chest X ray and 10% pneumothorax. 87% presented severe acute hypoxemic respiratory failure on admission, 40% required mechanical ventilation (MV). APACHE II (Acute Physiology and Chronic Health Evaluation II) score \geq 13 points in 76% of the patients. The initial treatment was trimethoprim-sulfamethoxazole (and corticosteroids) which should be suspended due to adverse events in 25% (15% granulocytopenia, 5% exanthema and 5% hyperkalemia), it was replaced by intravenous pentamidine. Overall mortality was 43%. CD4+ <100 cells/ μ L (p=0,03) (table 1), respiratory failure (p=0,03; OR= 6,276 [1,723-54,47]), MV (p=0,00001; OR= 11,39 [3,437-37,73]) and APACHE II \geq 13 points (p= 0,0004; OR= 16,55 [2,0431-36]) was related to mortality (p<0,05)

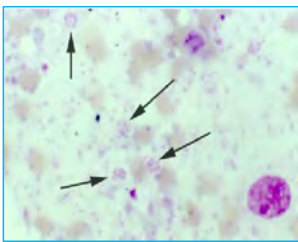


Fig. 1 Respiratory specimen of a patient with PJP. Optimar microscopy, Giemsa stain

Fig. 2 Respiratory specimen from a patient with PJP. Optical microscopy, calcofluor white stain

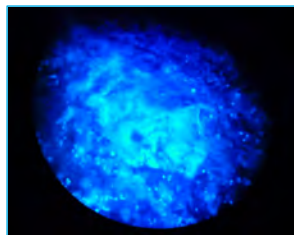


Fig. 3 Bilateral interstitial infiltrates in a chest X-ray of a patient with PJP



Table 1- Lymphocyte subpopulation and mortality

Lymphocyte subpopulation	No. of patients	No of Deaths	Mortality (%)
CD4 \geq 100 cells/ μ ml	5	0	0
CD4 <100 cells/ μ ml	58	26	45

Conclusion

In our serie mechanical ventilation, severity scores and severe immunosuppression were associated with mortality. Patients with CD4> 100 cells survived. Malnutrition was related with mortality but p was not statistically significant. Consider initiate empirical PJP treatment in severe pneumonia in HIP.

References
 1- Satoshi Shibata, Takeshi Nishijima, Takahiro Aoki, et al. Short-Term Adjunctive Corticosteroid Therapy for HIV-PCP. PLOS ONE. September 22, 2015
 2- Alison Morris, Jens D. Lundgren, Henry Masur, et al. Current Epidemiology of Pneumocystis Pneumonia. Emerging Infectious Diseases • Vol. 10, No. 10, October 2004