

## Abstract

**Title: Spirometry changes in AIDS-Kaposi sarcoma patients with pulmonary Kaposi sarcoma being followed at Parirenyatwa KS clinic**

**Author: Felix Donald Manyeruke**

**Background:** Pulmonary Kaposi sarcoma (pKS) in HIV positive patients is a condition that is associated with impaired lung function and has high mortality. There is evidence that the combination of chemotherapy and highly active antiretroviral therapy (HAART) improves survival in patients with pKS, but there is no evidence that this is associated with improvement in lung function.

**Methodology:** This was a pilot study of HIV positive patients with a bronchoscopic diagnosis of pKS. The patients were followed up for a period of 9 weeks. Spirometry, resting pulse oximetry, six-minute walk test and function status (Karnofsky score) were measured every 3 weeks as the patients received chemotherapy; chest x-rays were performed at baseline and at 9 weeks.

**Results:** Forty patients (mean age 37.3 years, 85% male) with a bronchoscopic diagnosis of pKS were enrolled and followed up for 9 weeks. The median CD4 count was 191 cells/ $\mu$ L and 57.5% of the patients had extensive pKS on bronchoscopy. Extensive pKS was associated with low FVC% 61.7 and FEV1% 59.9 when compared to localised pKS FVC% 89 and FEV1% 84.6. Patients with extensive pKS were more likely to have a restrictive spirometry defect when compared to patients with localised pKS, with an odds ratio of 5.19. Treatment of pulmonary Kaposi sarcoma with chemotherapy and HAART was associated with a non-statistically significant improvement in FVC mean  $\pm$  sd (73.3 $\pm$ 25.0 - 78.5 $\pm$ 18.1 p=0.737) and FEV1 (70.4 $\pm$ 23.7- 79.0 $\pm$ 15.9 p= 0.303) and statistically significant improvement in resting SpO<sub>2</sub> (93%-96% p=0.005), six-minute walk

test (347m-449m  $p= 0.038$ ) and functional status (70%-80%  $p= 0.013$ ). Among patients who completed follow up 71.4% of the patients had significant radiological improvements. Mortality after 9 weeks of follow up was 22.5%.

**Conclusion:** AIDS associated pKS is associated with impaired lung function tests and current therapy of HAART and chemotherapy stops further deterioration in lung function; there is however no significant short term improvement in the FVC and FEV1. Current therapy is associated with significant improvement in the resting SpO<sub>2</sub>, six-minute walk test, radiological changes and functional status. These parameters should be routinely monitored to assess response to therapy in patients with pKS. There is need to do a longer follow up study to assess if there is clinically significant improvement in the FVC and FEV1 in patients with pKS who have been treated with HAART and chemotherapy.