

## ICCN Poster Presentations

### Nutrition and aids

#### **Serum leptin levels, BMI and fat percentage of HIV positive women (25 – 44 years) in Mangaung, South Africa**

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**Background:** Fasting levels of the protein leptin are related to body fat content. Conflicting data exist regarding leptin levels in HIV positive and negative individuals. This study was part of a larger epidemiological study investigating women's nutritional health.

**Design:** Using township maps, a random, population-based sample of 500 women was selected and divided into age groups 25-34 years (n = 273) and 35 – 44 years (n = 215). Accepted WHO methods for determining weight and height were used. Bostadstat was used to determine bio-impedance. Both HIV status and leptin levels were determined using a micro-particle enzyme immunoassay method. Each group was categorized according to BMI as normal to underweight, overweight and obese (<25 kg/m<sup>2</sup>, 25.1-29.9 kg/m<sup>2</sup>, >30 kg/m<sup>2</sup> respectively) and fat percentage between 20 and 25% was considered normal. Groups were described and compared by non-parametric methods. BMI was described by medians and percentiles and compared by 95% CI's for the median difference as well as the Mann-Whitney test. Fat percentage was described by the mean and standard deviations and compared by 95% CI's as well as the student-t test.

**Results:** Sixty one percent of the younger women and 38% of the older women were HIV positive. In younger patients, BMI and fat percentage of HIV positive women was significantly lower than BMI of HIV negative women (p <0.01 for both). In the older group, BMI and fat percentage of HIV positive and HIV negative women did not differ significantly (p = 0.89 and p = 0.66 respectively). In both the younger and older groups, no significant difference was seen in median leptin values for HIV positive and negative individuals (p = 0.7622). Furthermore, leptin values differed significantly in the three BMI groups in both older and younger women with leptin values unexpectedly decreasing as BMI increased (p <0.0001).

**Conclusions:** In our study, younger HIV positive subjects had significantly lower BMI and fat percentage, compared to HIV negative women. However, HIV status was not associated with leptin concentrations. It is improbable that leptin is responsible for the wasting common in HIV positive individuals. The fact that leptin does not increase as BMI increases in this population could indicate an inherently different leptin metabolism possibly due to genetic or environmental factors.