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## COMPARISON OF ABDOMINAL FAT DISTRIBUTION IN HIV+ PATIENTS, WITH AND WITHOUT CLINICAL FAT REDISTRIBUTION AND HIV- PATIENTS, USING COMPUTED TOMOGRAPHY.

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**BACKGROUND:** Visceral abdominal fat accumulation and subcutaneous fat loss have been reported during antiretroviral therapy. Standardised assessments for this condition are not established.

**METHODS:** The distribution of subcutaneous (SAT), visceral (VAT), total (TAT) fat, and VAT:TAT ratio in four groups of patients was assessed by single slice CT scan through the umbilicus. The HIV+ patients consisted of 3 groups: clinical fat redistribution syndrome taking protease inhibitors (HIVPI), fat redistribution syndrome on PI-sparing therapy (HIVoPI) and therapy naïve patients without fat redistribution syndrome (HIVn). The control group comprised general radiology patients with previously normal CT examination and no significant medical disorder.

**RESULTS:** Patients were well matched for age (mean range 37.9-48.6yrs). For HIVPI, HIVoPI and HIVn, median CD4/mm<sup>3</sup> (range) were 400 (134-528), 363.5 (211-545) and 65 (19-89), and Log<sub>10</sub> viral load((sd) cps/ml) 1.32 (0.713), 1.74 (1.02), and 5.30 (0.76), respectively. Adipose tissue results expressed as a mean (95% confidence intervals in brackets below), or as a median (†) and inter quartile range as appropriate; *p*-values by Kruskal-Wallis test. For HIVPI (*n*=19) HIVoPI (*n*=7), HIVn (*n*=12) and Control (*n*=14) values are SAT(cm<sup>2</sup>) † 65.6(26-122), 72.9(45-142), 62.8(34-94), 155.3 (111-204), for VAT(cm<sup>2</sup>) 139.4(111-168), 161.5(101-222), 49.3(32-67), 102.7(69-137), for TAT(cm<sup>2</sup>) 220.3(172-269), 245.8(169-322), 128.5(68-189), 260.7(208-314) and for VAT:TAT 0.66(0.58-0.75), 0.66(0.51-0.80), 0.44(0.33-0.56) and 0.37(0.29-0.45), respectively. Significant differences were observed between SAT, VAT, TAT and VAT/TAT between the four groups of patients (*p*=0.0011, 0.0001, 0.0064 and 0.0001 respectively). HIV patient groups on- therapy with clinical both had a

significantly higher VAT:TAT than controls whereas therapy naïve patients had a similar VAT:TAT to controls.

**CONCLUSIONS:** Patients with clinical fat redistribution are distinguishable from controls by VAT:TAT measurement. Abdominal fat accumulation can occur in patients taking anti-retroviral therapy independent of protease inhibitor therapy.

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**Keywords:** AEGIS, Tomography, X-Ray Computed, Abdomen, Adipose Tissue, Obesity, Fats, Viscera, HIV Infections, Thoracic Surgery, Video-Assisted, Endocrine Diseases, Anti-HIV Agents, Metabolism, Inborn Errors, Antithrombin III, Case-Control Studies, antithrombin III-protease complex, Human, utilization, supply & distribution, radiography, AIDS

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22

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