Antiretroviral therapy - associated metabolic abnormalities among HIV-infected Chinese patients

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Background
Highly active antiretroviral therapy (HAART) is associated with metabolic abnormalities, the pattern of which has been characterised in Caucasians. We set out to describe these abnormalities in a Chinese cohort who were given protease inhibitor (PI)-based HAART.

Methods
The biochemistry findings of 115 antiretroviral-naïve Chinese patients who were started on PI-based HAART were followed for 16 months. Blood tests were performed every 3-4 months and patients were instructed to fast for at least 8 hours before blood taking. Metabolic abnormalities were arbitrarily defined as fasting blood sugar >7.8 mmol/L, triglyceride >4.5 mmol/L, and total cholesterol >6.2 mmol/L.

Results
Eight female and 107 male subjects of mean age 41 years (SD 9) were recruited. Among all, 63 (55%) took the same regimen unchanged during 16 months of follow-up; 44 (70%) were on indinavir, 12 (19%) on ritonavir-boosted indinavir, 6 (10%) on nelfinavir and one on ritonavir-boosted lopinavir (Kaletra®).

Subjects with metabolic abnormalities at baseline were excluded in the individual metabolic analysis. After 16 months of PI-based HAART, a total of 4 (out of 106) patients developed hyperglycaemia; 13 (out of 108) developed hypertriglyceridemia; 24 (out of 104) developed hypercholesterolemia. The cumulative incidence of hyperglycaemia, hypertriglyceridemia and hypercholesterolemia was 0.16, 0.57, and 1.25 per 100 person-years, respectively. Figure 1 showed the differences in the onset time of the metabolic events while Figure 2 showed the magnitude (means in mmol/L) in the elevation of blood sugar, triglyceride and total cholesterol in the groups with events versus those without.

Figure 1 The cumulative prevalence of metabolic abnormalities with PI-based HAART
Conclusions
Metabolic abnormalities are relatively common in Chinese HIV-infected patients on PI-based HAART. Whereas hypercholesterolemia is the commonest, hyperglycaemia presents the earliest. When present, hypertriglyceridemia is usually severe.