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HIV
Children
Protease inhibitors
Dyslipidaemia

Abstract

Background – HIV infection and antiretroviral therapy (ART) are associated with dyslipidaemia in children. Protease inhibitor (PI) based regimens, in particular, have shown the highest association.

Methods – We conducted a retrospective study of children treated with either a first- or second-line lopinavir/ritonavir (LPV/r) regimen who had any lipid tests done from 2004 to 2015. Dyslipidaemia was defined as hypercholesterolaemia [total cholesterol ≥5.13 mmol/l (≥200 mg/dl)] and/or hypertriglyceridaemia [total triglycerides ≥1.69 mmol/l (≥150 mg/dl)]. There were 4 cross sectional points of analysis in this study: ART start, LPV/r-start, 12 and 24 months after starting LPV/r. Demographic and clinical characteristics were compared using univariate and multivariate analyses to determine risk factors for dyslipidaemia at each time point using logistic regression to obtain odds ratios and 95% confidence intervals (95% CI).

Results - Few children had lipids measured over the follow-up period, increasing from 7% (146/2145) at ART initiation to 24% (365/1522) after 24 months on LPV/r. The median age at ART-start was 1.6 (0.4; 4.4) increasing to 3.6 (2.6; 6.2) years by 24 months. The majority (51%) of the children had severe immune suppression at ART-start. The prevalence of dyslipidaemia at ART-start was 47%, decreasing to 36% at 24 months. Multivariate analysis at 12 months found that children less than 10 years of age with near suppressed viral loads (viral load < 4 logs) were more likely to have dyslipidaemia. At 24 months on LPV/r, ART duration greater than 60 months and high viral loads were protective factors.

Conclusion – The high prevalence of dyslipidaemia in young children is concerning as lopinavir/ritonavir is the mainstay of ART in young children for the foreseeable future.