Background

• Adherence to anti-retroviral therapy (ART) is critical to achieve successful clinical outcomes; it is known to be problematic during adolescence
• Measurement of adherence is challenging and better understanding of the validity of adherence tools may improve adherence assessment
• The BREATHER trial (ISRCTN97750573) randomised participants, 8-24 years, to continuous ART versus short cycle therapy (5 days on, 2 days off). Young people had to be virologically suppressed on an efavirenz (EFV) based regimen to be eligible for BREATHER
• Our aim was to compare and evaluate the 6 different measures of adherence used in the BREATHER trial. The measures were evaluated against the outcome of viral rebound

Methods

Adherence Measures

• Viral load (VL) and 6 measures of adherence; any missed doses in the last week; any missed doses since last visit; visual analogue scale (VAS) (excluding scheduled days off in short cycle therapy group) each reported by participant and caregiver were collected at weeks 4, 12, then 12 weekly up to week 204 (Figure 1)

Figure 1. Adherence questions for young people on continuous therapy*

When was the last time you missed any of your ART? (Week*5)
- Not at all (0)
- Last week 1
- Last 2 weeks 2
- Last 3 weeks 3
- Last 4 weeks 4
- Last 6 weeks 6
- More than 6 weeks 7

*Young people on short cycle therapy were asked to ignore scheduled ART breaks when reporting missed doses

Statistical Methods

• The trial’s primary outcome was confirmed viral rebound (2 consecutive VL≥50c/ml) and was used in this analysis as a proxy for ‘true’ adherence. Trial arms were pooled as there were no significant differences between arms for any measure of adherence or viral rebound
• The association between viral rebound and each adherence measure/baseline characteristics were analysed using random effects logistic regression, adjusting for visit week and trial arm

Results

Baseline characteristics

• There were 199 participants, median age was 13.9 [IQR 11.9,17.4] years and median duration of ART was 6.0 [4.1,8.3] years (Table 1)

Follow-up and young person/caregiver reported adherence

• Median follow-up was 188 [IQR 155,203] weeks
• At 2438/3157 (77%) follow-up visits young people completed questionnaires; at 1461/3157 (46%) follow-up visits caregivers completed questionnaires
• Completion by young person/caregiver was driven by age

Figure 2. Missed doses reported by young people (YP) over trial follow-up

Young people reported:
• missed doses in the last week at 7% of visits
• missed doses since last visit at 22% of visits
• <95% compliance since last visit at 16% of visits

Figure 3. Missed doses reported by caregivers over trial follow-up

Caregivers reported:
• missed doses in the last week at 4% of visits
• missed doses since last visit at 15% of visits
• <95% compliance since last visit at 12% of visits

Figure 4. Comparison of methods to measure adherence in children and young people living with HIV: Analysis of data from the BREATHER trial

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