BACKGROUND

• For second-line treatment, WHO recommends either dolutegravir (DTG) or boosted protease inhibitors (PI/r) with optimised nucleoside reverse transcriptase inhibitors (NRTIs)

• Disadvantages of PIs include drug interactions, multi-pill dosing, adverse events and higher costs

• However, the genetic barrier to resistance is high for PIs

• This analysis compares the efficacy of DTG and PI/r as second line regimens for HIV

METHODS

• Data on HIV RNA was included from 4 randomised trials: VISEND (n=783), DAWNING (n=624), NADIA (n=464) and 2SD (n=791)

• They recruited NNRTI experienced patients given second line treatment with either DTG or a PI/r.

• Data on HIV RNA suppression <50 and <1000 copies/mL from each study was extracted

• The meta-analysis was conducted using RevMan Software

• The risk differences (RD) for HIV RNA suppression were calculated using the Cochran Mantel-Haenszel test (Random-effects model)

• The sensitivity analyses included only 2 of the 4 studies

• The non-inferiority margin was -10%

RESULTS

• The VISEND trial (Zambia), DAWNING (International) and NADIA (sub-Saharan Africa) recruited patients with HIV RNA >1000 copies/mL at baseline

• 2SD (Kenya) recruited patients stable on PIs with undetectable HIV RNA.

• At week 48, for patients viraemic at baseline, there was a significant difference between the DTG and PI/r arms in the number of patients with RNA <50 (RD = +10%, 95% CI. +2%,+17%, p=0.01) (Fig. 1)

• However, for patients already suppressed by PI/r at baseline, there was no significant difference between the DTG and PI/r arms (RD -1%, 95% CI. -5%,-3%, p=0.47) (Fig. 1)

• DTG was non-inferior to PI/r between the arms in the number of patients with RNA <1000 at week 48 (RD = +5%, 95% CI. -7%,-16%, p=0.43) (Fig. 2)

• At week 96, DTG was non-inferior to PI/r in the number of patients with RNA <50 (RD +11%, 95% CI. +1%,+21%, p=0.04) and RNA <1000 (RD +10%, 95% CI. +6%,-26%, p=0.22) (Fig. 3 & Fig. 4)

DISCUSSION AND CONCLUSION

• In this meta-analysis of HIV RNA suppression <50 copies/mL at week 48, there were 2662 participants evaluated in 4 randomised trials of second-line treatment. These trials enrolled patients taking NNRTI based treatment

• DTG showed a superior rate of HIV RNA suppression compared to PI/r based treatment in the primary analysis at week 48.

• In the sensitivity analyses, DTG was non-inferior to PI/r