**HIGH LEVEL OF PRE-EXISTING NRTI RESISTANCE PRIOR TO SWITCHING TO BIC/FTC/TAF (STUDY 4030)**

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**Background:** Bictegravir (BIC) is coformulated with the NRTIs emtricitabine (FTC) and tenofovir alafenamide fumarate (TAF) (B/F/TAF). Study 4030 is an ongoing, phase 3, randomized, double-blinded study (n=565) of HIV-1 RNA suppressed participants on QD dolutegravir (DTG) + FTC/TAF or FTC/tenofovir disoproxil fumarate (TDF) switching 1:1 to DTG + F/TAF or BIC/FTC/TAF for 48 weeks. NRTI, NNRTI, and PI resistance was allowed however documented INSTI resistance was not

**Methods:** Proviral DNA genotypes (GenoSure Archive) from baseline samples and historical plasma HIV-1 RNA genotypes were analyzed. Documented or suspected NRTI resistance was assigned to group 1) K65R/E/N or ≥3 TAMs containing M41L or L210W (TAMs: D67N, K70R, L210W, T215F/Y, and K219Q/E/N/R), group 2) M184I/V, any other set of TAMs, K70E/G/M/Q/S/T, L74I/V, V75A/S/M/T, Y115F, T69D, or Q151M, or group 3) no major NRTI resistance. Virologic outcomes used last available on-treatment HIV-1 RNA with the blinded Week 12 IDMC data cut.

**Results:** Historical genotypes were available from 285/565 participants (50%). Retrospective analysis of archived mutations by HIV DNA genotype were determined for 377/565 participants; 200 also had historical genotypes. In total, 82% (462/565) of participants had pre-switch genotypic data available resulting in 24% with major NRTI resistance: 5%(29/565) in group 1 and 18%(104/565) in group 2. M184V/I was present in 17%(77/462) of participants with data. HIV DNA genotyping identified previously unknown major NRTI resistance in 15% of participants(58/377). Pre-existing INSTI mutations were found in 5% of participants(19/399): T97A(n=12), N155S(N=1), Y143H(n=2), R263K(n=2), Q148H+G140S(n=1), and S147G(n=1). Primary NNRTIand PI mutations were present in 24%(113/462) and 8%(36/462) of participants. At this interim analysis, viral suppression was maintained in 99% of participants

**Conclusion:**

This study found frequent NRTI resistance in suppressed participants switching from DTG + FTC/TDF or FTC/TAF, much of which was previously undocumented. Early data show high suppression using BIC/FTC/TAF or DTG + FTC/TAF.