Factors Associated with Non-completion of Latent Tuberculosis Infection (LTBI) Treatment: Experience from the Randomized PREVENT TB Trial in the United States and Canada

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Background

- LTBI prophylactic treatment plays an important role in the United States (U.S.) strategy for LTBI (tuberculosis) elimination.
- Treatment completion is a challenge since LTBI is asymptomatic and often not perceived as a real threat.
- Low completion rate of LTBI treatment compromises effectiveness and lowers protection against TB.
- Non-completion rate for 9 months of isoniazid has been reported as high as 43% around 68 clinics in the U.S. (1).

PREVENT TB (NCT 0211) was a randomized open-label trial of 3 months once-weekly rifapentine (600 mg) plus isoniazid (300 mg) (3HP-DOT) versus 9 months daily isoniazid (300 mg, 9H-SAT). Overall rates of non-completion of treatment (NCT) were 37.9% for 3HP-DOT and 31% for 9H-SAT (1).

Objectives

- To assess factors associated with NCT for LTBI among adult participants enrolled in U.S. and Canada sites of the PREVENT TB trial.

Methods

- From the 8,053 participants enrolled in the PREVENT TB trial, the following groups were excluded in order to select the study population for this analytic: participants enrolled in non-North America sites, persons younger than 18 years of age; women who became pregnant during the trial, participants found to be ineligibles to the trial (see flow chart).

- The population for this analysis included participants enrolled in 26 sites: U.S. and Canada only. 3HP-DOT-assigned participants received treatment under direct observation every week. Those assigned to 9H-SAT self-administered the treatment daily. Participants of both regimens were evaluated at the clinic every month.

- NCT was defined as failure to complete at least 11 of 12 doses in 10-16 weeks for 3HP-DOT and failure to complete at least 34 of 67 doses in 35-52 weeks for 9H-SAT.

- A missed early clinic visit was defined as missing any of the first 3 of the 12 weekly DOTs for 3HP-DOT and missing any of the first 3 of the monthly visits for 9H-SAT.

- The incidence rate of non-completion of treatment was calculated in the analyzed population (n=6,632).

Factors associated with NCT were assessed by univariate and multivariate logistic regression (LR) with enrolling site as a random effect, using SAS v 9.3, SAS Institute, Cary, NC. Odds ratios (OR), 95% Confidence Intervals (CI), and p-value at 0.05 were calculated.

- More qualitative process data and more ICAT results will help to reveal specific opportunities for improvement of the IC process.

- Among 7,799 participants, 1,406 (3HP=568, 9H=838) were incarcerated males.

Limitations

- Study 26 was an open-label clinical trial subject to bias.

- 3HP-DOT was directly observed weekly, with more frequent interaction between providers and participants which probably improved compliance.

Conclusions

- 3HP-DOT has less non-completion of treatment compared to 9H-SAT.

- 3HP and 9H have some shared and some distinct factors associated with non-completion.

Reference