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Press Information

Tuberculosis: children hospitalized with severe pneumonia in high-incidence countries should be screened for TB

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Tuberculosis affects 1 million children each year; less than half of them are diagnosed and treated for the disease, which leads to more than 200,000 deaths. In a new study, researchers and clinicians from the TB-Speed consortium funded by global health agency Unitaid and led by the University of Bordeaux, in collaboration with the French Research Institute for Sustainable Development (IRD) and MU-JHU (a research collaboration between Makerere University and John Hopkins University in Uganda), showed that screening for tuberculosis at the time of hospital admission was feasible in children with severe pneumonia.

In addition, screening with a molecular test called Xpert Ultra improved the diagnosis of tuberculosis in children in countries with high incidence of the disease. The results of the study argue for a more systematic use of the Xpert Ultra in these children, especially in those suffering from severe acute malnutrition. They also confirm the importance of tuberculosis as a cause of severe pneumonia. These findings were published on November 15th, 2022 in *The Lancet Infectious Diseases.*

In countries with a high incidence of tuberculosis, the disease can be a cause of severe pneumonia and can contribute to mortality in young children. Usually the diagnosis of tuberculosis is considered only in children presenting with prolonged symptoms, those failing antibiotic courses prescribed for community-acquired pneumonia, or those with a history of contact with an adult with tuberculosis disease. Thus, many tuberculosis cases are missed or diagnosed with delays, which can result in poor outcomes and death.

However, young children presenting with tuberculosis-related severe pneumonia can have acute symptoms and would not be considered as presumptive tuberculosis cases. In this context, the TB-Speed consortium made the hypothesis that a tuberculosis screening in young children admitted with severe pneumonia with immediate treatment initiation for those who tested positive could reduce mortality of severe pneumonia related to tuberculosis.

TB-Speed Pneumonia is the first large-scale international cluster-randomized trial to assess the effect of doing systematic molecular tuberculosis detection in addition to the World Health Organization WHO standard of care in children admitted with severe pneumonia. The study, funded by Unitaid and the Initiative, and sponsored by INSERM, was conducted in 16 tertiary hospitals across six countries with high tuberculosis incidence (Cote d'Ivoire, Cameroon, Uganda, Mozambique, Zambia and Cambodia).

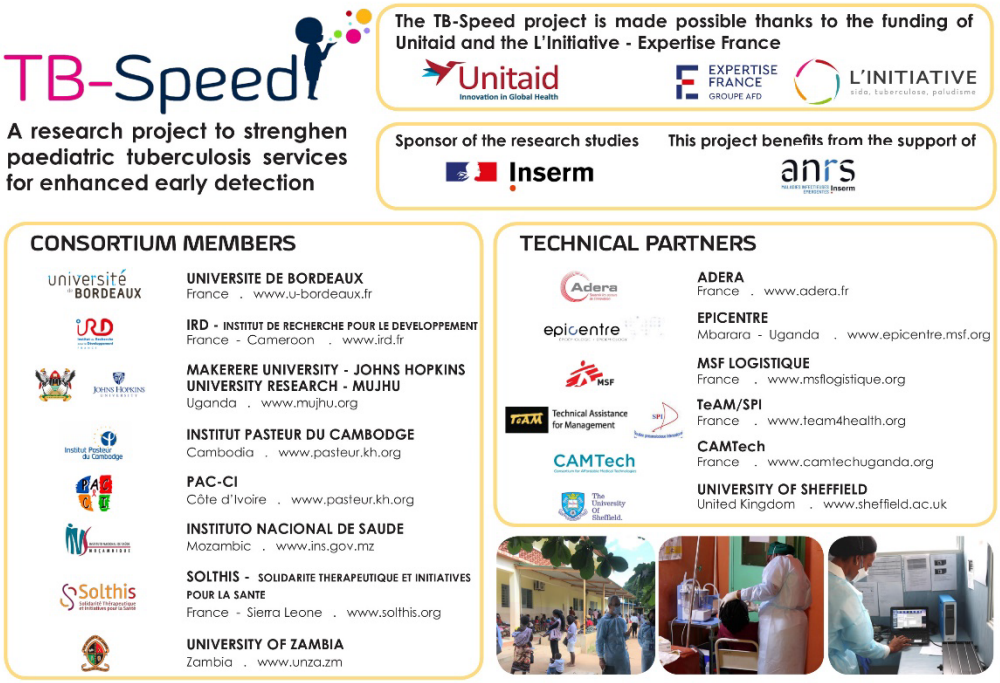
It aimed to assess the impact on mortality of adding systematic molecular tuberculosis detection using the Xpert MTB/RIF Ultra (Ultra) assay performed on one nasopharyngeal aspirate and one stool sample to the standard of care recommended by the World Health Organization for children with severe pneumonia (that includes antibiotics course, oxygen when indicated and treatment of HIV infection and severe malnutrition). Hospitals were randomly selected to start molecular testing and the flow was organized in order to reduce time to results to 3 hours. All children with Ultra positive results were immediately started on tuberculosis treatment. Children were followed for 12 weeks after enrolment.

2570 children were enrolled in the study (1401 in the control arm and 1169 in the intervention arm) between March 2019 and March 2021. 95% of children had nasopharyngeal aspirates and 80% had stools collected and tested with Ultra.

Although this tuberculosis screening intervention did not lead to a reduction in 12-week all-cause mortality as compared to the standard of care, it increased the rates of tuberculosis detection and microbiological confirmation and reduced the time to treatment initiation.

In addition, mortality and tuberculosis diagnosis rates were four to five times higher in children with severe acute malnutrition as compared to those without severe acute malnutrition. The study also showed that collecting and testing nasopharyngeal aspirates and stool samples with Xpert MTB/RIF Ultra in highly vulnerable children was highly feasible and well tolerated.

More about the TB-Speed project



Sources :
Effect of systematic tuberculosis detection on mortality in young children with severe pneumonia in countries with high incidence of tuberculosis: a stepped-wedge cluster-randomised trial
Lancet Infectious diseases, 15 novembre 2022

About TB-Speed
TB-Speed is a research program funded by Unitaid & L'Initiative aiming at reducing childhood mortality due to tuberculosis (TB) by developing, testing, and delivering an innovative, decentralized, cost-effective, and feasible childhood TB diagnostic strategy to increase case finding in children. This research project is implemented in seven countries in sub-Saharan Africa and South-East Asia. It includes several studies testing different diagnostic approaches in specific paediatric populations at risk of tuberculosis or settings. TB-Speed is coordinated by the Université de Bordeaux.
https://www.tb-speed.com/

About Unitaid
Unitaid is a global health agency engaged in finding innovative solutions to prevent, diagnose, and treat diseases more quickly, cheaply, and effectively, in low- and middle-income countries. Its work includes funding initiatives to address major diseases such as HIV/AIDS, malaria, and tuberculosis, as well as HIV co-infections and co-morbidities such as cervical cancer and hepatitis C, and cross-cutting areas, such as fever management. Unitaid is now applying its expertise to address challenges in advancing new therapies and diagnostics for the COVID-19 pandemic, serving as a key member of the Access to COVID-19 Tools (ACT) Accelerator. Unitaid is hosted by the World Health Organization.

About L'Initiative

L'Initiative is a project implemented by Expertise France launched at the end of 2011, which complements the work of the Global Fund to Fight AIDS, Tuberculosis and Malaria. It provides technical assistance and catalytic funding to Global Fund recipient countries to improve the effectiveness of their grants and strengthen the health impact of funded programs. In this way, it contributes to ensuring the effectiveness of pandemic responses and health systems.
Countries eligible for support from L'Initiative include the 19 priority countries for French official development assistance and member countries of La Francophonie. Recent development at L'Initiative have further demonstrated its catalytic effect, through building the capacity of health and civil society actors, improving institutional, political and social frameworks, and supporting innovative approaches to respond to pandemics.
L'Initiative as a key Global Fund impact partner, puts France and the stakeholders involved (research actors, civil society, public agencies, etc.), in an unprecedented position in the response to fight AIDS, tuberculosis and malaria.

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