Safety and immunogenicity of a tetravalent dengue vaccine in healthy children aged 2-11 years in Malaysia: A randomized, placebo-controlled, Phase III study.

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Source
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Abstract

BACKGROUND:
Dengue disease is a major public health problem across the Asia-Pacific region for which there is no licensed vaccine or treatment. We evaluated the safety and immunogenicity of Phase III lots of a candidate vaccine (CYD-TDV) in children in Malaysia.

METHODS:
In this observer-blind, placebo-controlled, Phase III study, children aged 2-11 years were randomized (4:1) to receive CYD-TDV or placebo at 0, 6 and 12 months. Primary endpoints included assessment of reactogenicity following each dose, adverse events (AEs) and serious AEs (SAEs) reported throughout the study, and immunogenicity expressed as geometric mean titres (GMTs) and distribution of dengue virus (DENV) neutralizing antibody titres.

RESULTS:
250 participants enrolled in the study (CYD-TDV: n=199; placebo: n=51). There was a trend for reactogenicity to be higher with CYD-TDV than with placebo post-dose 1 (75.4% versus 68.6%) and post-dose 2 (71.6% versus 62.0%) and slightly lower post-dose 3 (57.9% versus 64.0%). Unsolicited AEs declined in frequency with each subsequent dose and were similar overall between groups (CYD-TDV: 53.8%; placebo: 49.0%). Most AEs were of Grade 1 intensity and were transient. SAEs were reported by 5.5% and 11.8% of participants in the CYD-TDV and placebo groups, respectively. No deaths were reported. Baseline seropositivity against each of the four DENV serotypes was similar between groups, ranging from 24.0% (DENV-4) to 36.7% (DENV-3). In the CYD-TDV group, GMTs increased post-dose 2 for all serotypes compared with baseline, ranging from 4.8 (DENV-1) to 8.1-fold (DENV-3). GMTs further increased post-dose 3 for DENV-1 and DENV-2. Compared with baseline, individual titre increases ranged from 6.1-fold (DENV-1) to 7.96-fold (DENV-3).

CONCLUSIONS:
This study demonstrated a satisfactory safety profile and a balanced humoral immune response against all four DENV serotypes for CYD-TDV administered via a three-dose regimen to children in Malaysia.

KEYWORDS:
Immunogenicity, Malaysia, Paediatric population, Safety, Suggestions dengue, Vaccine

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