SAFETY AND IMMUNOGENICITY OF A QUADRIVALENT MENINGOCOCCAL CONJUGATE VACCINE (MenACYW-TT) ADMINISTERED AS A SINGLE DOSE IN A BROAD AGE RANGE (12 MONTHS AND ABOVE)

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Quadrivalent meningococcal conjugate vaccines offer protection against 4 of the most invasive meningococcal groups - A, C, Y and W (W-135).

MenACYW-TT is an investigational quadrivalent meningococcal vaccine conjugated to Tetanus Toxoid and intended for use in a broad age population (6 weeks of age and older).

Summary of safety and immunogenicity across 12 months and above is presented. Studies in ages less than 12 months are ongoing.

We evaluated the safety and immunogenicity of MenACYW-TT conjugate vaccine compared to licensed quadrivalent meningococcal polysaccharide vaccines (MCV4-TT, MenFMC®), MCV4-DT, MenAcr®) in toddlers (12-23 months), children (2-9 years), adolescents (10-17 years) and adults (18-55 years); and licensed quadrivalent meningococcal polysaccharide vaccine (MPSV4, Menomune®) in adults ≥65 years of age.

A total of 3 phase II and 6 phase III studies, administering the vaccine as a single dose, were conducted globally (USA, Europe (Finland, Germany, Spain, Hungary), South Korea, Thailand, Russia and Mexico) in a broad age range (12 months and above).

All but one studies evaluated MenACYW-TT conjugate vaccine vs a licensed standard of care comparator vaccine to demonstrate immune non-inferiority or describe the immunogenicity responses.

Statistical hypothesis of immune non-inferiority was evaluated on the endpoint considered relevant by the health authority of the country where the study was conducted. Data presented in this poster will focus on seroprotection results.

Co-administration with age specific vaccines was also evaluated in adolescents/babies: tetanus toxoid, reduced diphtheria toxoid, acellular pertussis (Tdap) vaccine and Human Papillomavirus (4vHPV) vaccine) and toddlers [mæsal, mums rubella (MRR), varicella (V)], Pneumococcal 13-valent Conjugate Vaccine (PCV13), diphtheria, tetanus, acellular pertussis, poliomyelitis, B and Haemophilus influenza type b conjugate vaccine (DTaP-IPV-HB-Hib)].

Serum bactericidal assays with human (hSBA) and baby rabbit [sBBA] in a subset of subjects) complement were used to evaluate antibodies at baseline and 30 days after vaccination.

Safety data were collected up to 30 days or 6 months post-vaccination.

Summary of Immunogenicity Findings

- Non-inferiority of immune responses was demonstrated between MenACYW-TT conjugate vaccine and comparator vaccines for all four serogroups across all ages, based on percentages of participants achieving hSBA vaccine seropositive at Day 30 compared to baseline (children, adolescents, adults and elderly) or percentages of participants achieving hSBA ≥ 1.8 at Day 30 (toddlers).
- The percentages of participants with post vaccination hSBA ≥ 1.8 (seropositive) were higher or comparable to comparator for all serogroups in subjects vaccinated with MenACYW-TT conjugate vaccine across all age groups.
- The percentages of participants with post vaccination hSBA ≥ 1.28 were comparable to or higher in all serogroups in subjects vaccinated with MenACYW-TT conjugate vaccine versus comparator vaccine (data not shown).
- There were no related AEs leading to study discontinuation and no related serious adverse events among MenACYW-TT recipients.
- Post-vaccination rates of severe reactions were low for all vaccines.
- There were no important changes in the safety profiles of the concomitant vaccines when given with MenACYW-TT.

Table 1: Overview of Clinical Development

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Study Code</th>
<th>Phase</th>
<th>Regimen</th>
<th>Comparator</th>
<th>Sample size</th>
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<tbody>
<tr>
<td>12-3 months</td>
<td>MET54</td>
<td>II</td>
<td>Finland</td>
<td>Nimenax®</td>
<td>188</td>
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<tr>
<td>2-9 yrs</td>
<td>MET51</td>
<td>III</td>
<td>Finland, Germany, Hungary</td>
<td>Nimenax®</td>
<td>848</td>
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<tr>
<td>3-11 yrs</td>
<td>MET73</td>
<td>III</td>
<td>South Korea, Thailand, Russia</td>
<td>N/A</td>
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<tr>
<td>10-14 yrs</td>
<td>MET70</td>
<td>III</td>
<td>USA</td>
<td>Menomune®</td>
<td>1060</td>
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<tr>
<td>15-19 yrs</td>
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<td>III</td>
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<td>Menomune®</td>
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<tr>
<td>18-55 yrs</td>
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<td>III</td>
<td>USA, Italy</td>
<td>Menomune®</td>
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<td>56 yrs+</td>
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<td>USA</td>
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<td>301</td>
</tr>
<tr>
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<td>MET93</td>
<td>II</td>
<td>USA</td>
<td>Menomune®</td>
<td>807</td>
</tr>
</tbody>
</table>

*Provisional data using investigational product (clinical phase II trials).

Summary of Safety Findings

- Overall, the safety profiles of MenACYW-TT and standard of care vaccines were comparable across all ages.
- No safety concerns were identified.
- There were no related AEs leading to study discontinuation and no related serious adverse events among MenACYW-TT recipients.
- Post-vaccination rates of severe reactions were low for all vaccines.
- There were no important changes in the safety profiles of the concomitant vaccines when given with MenACYW-TT.

MenACYW-TT was well tolerated and no safety concerns were identified.

MenACYW-TT demonstrated a non-inferior immune response compared to the standard of care quadrivalent conjugate or polysaccharide meningococcal vaccines in a broad age range of 12 months and above.

MenACYW-TT demonstrated higher or comparable seroprotection rates compared to the standard of care quadrivalent conjugate or polysaccharide meningococcal vaccines in a broad age range of 12 months and above including elderly.

This vaccine will be a global option for the prevention of invasive meningococcal diseases in a broad age-range.

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