Title **A Randomized, Partially Observer-Blind, Multi-Centre, Head-to-Head Comparison of a Two Dose Regimen of Baxter and GSK H1N1 Pandemic Vaccines, Administered 21 Days Apart**

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Aim

To evaluate the immunogenicity of a two-dose schedule of Baxter cell-cultured, nonadjuvanted, whole-virion H1N1 vaccine, and GlaxoSmithKline AS03A-adjuvanted split-virion H1N1 vaccine with respect to the EU Committee for Medicinal Products for Human Use (CHMP) and the US Food and Drug Administration (FDA) licensing criteria.

Conclusions and results

Both vaccine doses were given in 340 subjects (98%). Data from 680 (99%) of 687 issued diary cards were returned. Sera were obtained from 340 (98.0%), 333 (96.0%), 341 (98.3%), 331 (95.4%), 329 (94.8%), and 332 (95.7%) subjects on days 7, 14, 21, 28, 35, and 42, respectively. The safety and immunogenicity analyses included 346 and 345 subjects, respectively. Prevaccination antibody was detected by HI (titer ≥1:8) and MN (titer ≥1:10) in 14% and 31% of subjects, respectively. Among the 298 (85.9%) subjects without baseline antibody on HI assay, a titer of ≥1:40 (seroprotection) was achieved after a single dose of AS03A-adjuvanted vaccine and WV vaccine by day 21 in 93.0% and 65.5%, respectively, of subjects between 18 and 44 years, 76.4% and 36.1% of subjects between 45 and 64 years, and 53.1% and 30.0% of subjects ≥65 years. Among all 347 subjects, a titer of ≥1:40 was achieved after a single dose of AS03A-adjuvanted vaccine and WV vaccine by day 21 in 94.0% and 71.4%, respectively, of subjects between 18 and 44 years, 77.3% and 38.8% of subjects between 45 and 64 years, and 51.4% and 32.4% of subjects ≥65 years. The age-adjusted odds ratio (OR) for adjuvanted compared with WV vaccine, in terms of seroprotection, was 4.42 (95% confidence interval [CI] 2.63 to 7.44, p <0.001). On day 42, among subjects without baseline antibody on HI assay, a titer of ≥1:40 was achieved after the second dose of AS03A-adjuvanted vaccine and WV vaccine by 100% and 67.9%, respectively, of subjects between 18 and 44 years, 89.3% and 41% of subjects between 45 and 64 years, and 76.5% and 34.5% of subjects ≥65 years. Among all 347 subjects, a titer of ≥1:40 was achieved on day 42 after the second dose of AS03A-adjuvanted vaccine and WV vaccine in 100% and 73.1%, respectively, of subjects between 18 and 44 years, 90.8% and 43.9% of subjects between 45 and 64 years, and 75.7% and 36.4% of subjects ≥65 years. The age-adjusted OR for adjuvanted vaccine compared with WV vaccine, in terms of seroprotection, was 11.21 (95% CI 5.80 to 21.64, p <0.001). Age-related decline in antibody response occurred after both doses of both vaccines. WV vaccine was associated with fewer local and systemic reactions and lower immune responses than was AS03A-adjuvanted vaccine. The most frequent solicited local event was pain, reported by 28% and 76% of subjects after either dose of WV or adjuvanted vaccine, respectively (OR 7.71, 95% CI 4.48 to 13.24, p <0.0001). The most common systemic event was myalgia, reported by 24% and 49% of subjects after either dose of WV or adjuvanted vaccine (OR 2.99, 95% CI 1.86 to 4.80, p <0.0001). (For further details see Abstract in www.netscc.ac.uk/supporting_research/flu_project_portfolio/099301.asp.)

Recommendations

See Executive Summary link at www.netscc.ac.uk/supporting_research/flu_project_portfolio/099301.asp.

Methods

See Executive Summary link at www.netscc.ac.uk/supporting_research/flu_project_portfolio/099301.asp.

Further research/reviews required

See Executive Summary link at www.netscc.ac.uk/supporting_research/flu_project_portfolio/099301.asp.

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