

O1012 Study of the humoral response of fractionated and adjuvanted influenza vaccines in the elderlyLaura Sanchez De Prada*¹, Iván Sanz², Ana Lopez², Sonia Tamames³, Silvia Rojo^{1,2}, Raul Ortiz De Lejarazu^{1,2}¹ Microbiology Unit, Hospital Clínico Universitario de Valladolid, Valladolid, Spain, ² Valladolid National Influenza Centre, Valladolid, Spain, ³ Consejería de Sanidad, Valladolid, Spain

Background: Fractionated influenza vaccines (FIV) have limitations to reach desirable humoral responses in elderly. For improving these humoral responses, new influenza vaccines are being used as adjuvanted influenza vaccines (ADIV). Because elderly is one of the targets of influenza vaccination, it is important to check if ADIV elicit higher humoral responses than FIV. The aim of this study is to compare the humoral response in elderly people vaccinated with FIV and ADIV.

Materials/methods: A retrospective study was performed in 3,355 healthy individuals ≥ 65 years vaccinated with FIV and ADIV, recruited from 1990 till 2018. Serum samples were obtained before and 28 days after vaccination. For analyzing the antibodies titers in both sera, haemagglutination inhibition assay was performed at the National Influenza Centre of Valladolid (Spain) against classical A(H1N1) (from 1990 till 2010), A(H1N1)pdm09 (from 2010 till 2018), A(H3N2) and for both influenza B/Yamagata and B/Victoria lineages. The statistical analysis was performed calculating the Geometric Mean Titers (GMT)(CI95%) and the GMTincrease induced by FIV and ADIV. Differences between both types of vaccines were analyzed using Student-T test ($\alpha < 0.05$).

	FIV	ADIV			
	prevaccineGMT	postvaccineGMT	GMTincrease	prevaccineGMT	postvaccineGMT
Classical-A(H1N1)	36.5(34.0-39.1)	138.03(117.5-158.5)	3.8	21.7(19.5-24.3)	59.0(52.8-66.5)
A(H1N1)pdm09	37.2(31.0-45.1)	165.0(135.5-194.8)	4.4	28.8(24.6-33.9)	165.9(152.3-180.4)
A(H3N2)	95.5(87.3-104.7)	239.9(218.8-257.0)	2.5	87.1(77.6-95.5)	295.1(269.1-316.2)
B/Yamagata	158.5(147.9-173.8)	270.0(251.1-289.8)	1.7	102.3(93.3-109.6)	251.2(234.4-269.2)
B/Victoria	64.6(60.3-70.8)	117.5(107.2-125.9)	1.8	89.3(81.4-98.2)	218.8(202.8-236.5)

Results: A total amount of 2246(66.94%) individuals were vaccinated with FIV and 1109(33.06%) with ADIV. GMTincrease was significantly higher in ADIV for A(H3N2), B/Yamagata and B/Victoria viruses, while GMTincrease was significantly higher for FIV for the classical-A(H1N1) subtype (Student-T;p=0.000). Results showed no significant differences between FIV and ADIV for the A(H1N1)pdm09 subtype. Values of GMT and GMT increase are shown in the following table.

Conclusions: Our results showed that ADIV induced higher humoral responses in the elderly against some influenza viruses as A(H3N2), B/Yamagata and B/Victoria, but FIV induced higher humoral response for classical-A(H1N1) subtype. No differences were found for A(H1N1)pdm09. These results remark that ADIV are more useful than FIV for inducing higher humoral responses in elderly for much of the influenza viruses that currently infects humans.

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