MF-59 adjuvanted vaccine

Author(s): Health Information and Quality Authority (HIQA) **Date:** 2020-05-25
Question: Should MF-59 adjuvanted influenza vaccine vs conventional inactivated influenza vaccine be used in the elderly?
Bibliography: Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines for the prevention of laboratory-confirmed influenza in individuals ≥18 years of age

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	MF-59 adjuvanted influenza vaccine	Conventional inactivated influenza vaccine	Relative (95 % CI)	Absolute		
Lab-confirmed influenza (assessed with: PCR or culture)												
5	Test-negative design studies	serious[1]	serious[2]	no serious indirectness	no serious imprecision	none	–	–	VE ranged from 0 (0 to 86) to 88 (51 to 100)	– –	⊕⊕◯◯ LOW	CRITICAL
Influenza-related hospitalization (assessed with: ICD-9/ICD-10 code)												
2	Cohort studies	no serious risk of bias	no serious inconsistency	serious[3]	serious[4]	none	–	–	VE ranged from 3 (0 to 6) to 6 (0 to 63)	– –	⊕⊕◯◯ LOW	CRITICAL
Influenza- or pneumonia-related hospitalization (assessed with: ICD-9/ICD-10)												
2	Cohort study; case-control study	very serious[5]	no serious inconsistency	serious[3]	no serious imprecision	none	–	–	VE ranged from 25 (2 to 43) to 49 (30 to 60)	– –	⊕◯◯◯ VERY LOW	CRITICAL
Combined local events												
4	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	327/1000 (32.7 %)	172/1000 (17.2 %)	RR 1.90 (1.50 to 2.39)	155 more per 1000 (from 86 more to 239 more) –	⊕⊕⊕◯ MODERATE	CRITICAL
Pain												
12	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	274/1000 (27.4 %)	135/1000 (13.5 %)	RR 2.02 (1.53 to 2.67)	138 more per 1000 (from 72 more to 225 more) –	⊕⊕⊕◯ MODERATE	CRITICAL
Combined systemic events												
5	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	80/1000 (8 %)	67/1000 (6.7 %)	RR 1.18 (1.02 to 1.38)	12 more per 1000 (from 1 more to 25 more) –	⊕⊕⊕◯ MODERATE	CRITICAL
Fever												
9	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	serious[7]	none	58/1000 (5.8 %)	30/1000 (3 %)	RR 1.97 (1.07 to 3.61)	29 more per 1000 (from 2 more to 78 more) –	⊕⊕◯◯ LOW	CRITICAL

1 Low to serious risk of bias in the individual studies | 2 High inconsistency between study results: VE ranging between 0 and 88 % | 3 ICD-codes used for diagnosis, therefore unclear whether influenza was lab-confirmed | 4 Wide 95 % CI around one study (Puig-Barbera et al.) | 5 serious risk of bias in both studies | 6 serious risk of bias | 7 wide 95 % CI around point estimate

Cell-based vaccine

Author(s): Health Information and Quality Authority (HIQA) **Date:** 2020-05-25
Question: Should cell-based influenza vaccine vs conventional inactivated influenza vaccine be used in the elderly?
Bibliography: Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines for the prevention of laboratory-confirmed influenza in individuals ≥18 years of age

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Cell-based influenza vaccine	Conventional inactivated influenza vaccine	Relative (95 % CI)	Absolute		
Laboratory-confirmed influenza												
1	test-negative design study[1]	serious[2]	no serious inconsistency	no serious indirectness	serious[3]	none	–	–	VE 0 (0 to 39)[4]	–	⊕⊕◯◯ LOW	CRITICAL
										–		
Hospitalization												
1	cohort study	no serious risk of bias	no serious inconsistency	serious[5]	no serious imprecision	none	–	–	VE 10 (7 to 13)	–	⊕⊕⊕◯ MODERATE	CRITICAL
										–		
Combined local events												
4	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	serious[3]	none	432/1000 (43.2 %)	397/1000 (39.7 %)	RR 1.09 (0.89 to 1.35)	36 more per 1000 (from 44 fewer to 139 more)	⊕⊕◯◯ LOW	CRITICAL
										–		
Pain												
5	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	serious[3]	none	250/1000 (25 %)	210/1000 (21 %)	RR 1.19 (0.98 to 1.44)	40 more per 1000 (from 4 fewer to 92 more)	⊕⊕◯◯ LOW	CRITICAL
										–		
Combined systemic events												
3	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	433/1000 (43.3 %)	409/1000 (40.9 %)	RR 1.06 (0.93 to 1.21)	25 more per 1000 (from 29 fewer to 86 more)	⊕⊕⊕◯ MODERATE	CRITICAL
										-		
Fever												
6	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	9/1000 (0.9 %)	9/1000 (0.9 %)	RR 1.01 (0.51 to 2.00)	0 more per 1000 (from 4 fewer to 9 more)	⊕⊕⊕◯ MODERATE	CRITICAL
										–		

1 one study with two estimates (all strains; H3N2) | 2 moderate risk of bias | 3 Wide 95 %CI around point estimate | 4 VE against all strains | 5 diagnosis based on ICD-10 codes | 6 downgraded for RoB

High-dose vaccine

Author(s): Health Information and Quality Authority (HIQA) **Date:** 2020-05-25
Question: Should high-dose influenza vaccine vs conventional inactivated influenza vaccine be used in the elderly?
Bibliography: Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines for the prevention of laboratory-confirmed influenza in individuals ≥18 years of age

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	High-dose influenza vaccine	Conventional inactivated influenza vaccine	Relative (95 % CI)	Absolute	Quality	Importance
Laboratory-confirmed influenza-like illness												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	228/15990 (1.4 %)	301/15993 (1.9 %)	VE 24 (9.7 to 36.5)	5 fewer per 1000 (from 7 fewer to 18 fewer)	⊕⊕⊕⊕ HIGH	CRITICAL
Influenza-related hospitalization												
2	cohort studies[1]	serious[2]	serious[3]	serious[4]	no serious imprecision	none	–	–	VE 11.8 (6.4 to 17.0)	–	⊕○○○ VERY LOW	CRITICAL
Influenza- or pneumonia-related hospitalization												
3[5]	cohort studies	very serious[6]	no serious inconsistency	serious[4]	no serious imprecision	none	–	–	VE 13.7 (9.5 to 17.7)	–	⊕○○○ VERY LOW	CRITICAL
Combined local events												
3	randomised trials	serious[7]	no serious inconsistency	no serious indirectness	serious[8]	none	527/1000 (52.7 %)	376/1000 (37.6 %)	RR 1.40 (1.20 to 1.64)	150 more per 1000 (from 75 more to 241 more)	⊕⊕○○ LOW	CRITICAL
Pain												
8	randomised trials	serious[7]	no serious inconsistency	no serious indirectness	no serious imprecision	none	438/1000 (43.8 %)	296/1000 (29.6 %)	RR 1.48 (1.21 to 1.82)	142 more per 1000 (from 62 more to 243 more)	⊕⊕⊕○ MODERATE	CRITICAL
Combined systemic events												
5	randomised trials	serious[7]	serious[9]	no serious indirectness	no serious imprecision	none	353/1000 (35.3 %)	302/1000 (30.2 %)	RR 1.17 (0.85 to 1.61)	51 more per 1000 (from 45 fewer to 184 more)	⊕⊕○○ LOW	CRITICAL
Fever												
8	randomised trials	serious[7]	serious[9]	no serious indirectness	serious[8]	none	24/1000 (2.4 %)	15/1000 (1.5 %)	RR 1.52 (0.58 to 3.69)	8 more per 1000 (from 6 fewer to 40 more)	⊕○○○ VERY LOW	CRITICAL

1 2 studies reporting data on 7 seasons (7 estimates) | 2 low to moderate risk of bias in the two studies | 3 high between-study heterogeneity (I^2 = 81.3%) | 4 diagnosis based on ICD-9 or ICD-10 code | 5 3 studies reporting 7 estimates | 6 serious risk of bias in all 3 studies | 7 downgraded due to high risk of bias | 8 wide 95%CI around point estimate | 9 downgraded due to inconsistency

Recombinant vaccine

Author(s): Health Information and Quality Authority (HIQA) **Date:** 2020-05-25
Question: Should recombinant influenza vaccine vs conventional inactivated influenza vaccine be used in the elderly?
Bibliography: Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines for the prevention of laboratory-confirmed influenza in individuals ≥18 years of age

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Recombinant influenza vaccine	Conventional inactivated influenza vaccine	Relative (95 % CI)	Absolute		
Laboratory-confirmed influenza-like illness												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	–	–	VE 17 (0 to 43)[2]	– –	⊕⊕⊕◯ MODERATE	CRITICAL
Influenza-related hospitalization												
2	randomised trials	serious[3]	serious[4]	no serious indirectness	no serious imprecision	none	395/1000 (39.5 %)	420/1000 (42 %)	RR 0.94 (0.90 to 0.98)	25 fewer per 1000 (from 8 fewer to 42 fewer) –	⊕⊕◯◯ LOW	CRITICAL
Influenza- or pneumonia-related hospitalization												
3[5]	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	no serious imprecision	none	217/1000 (21.7 %)	231/1000 (23.1 %)	RR 0.94 (0.73 to 1.21)	14 fewer per 1000 (from 62 fewer to 49 more) –	⊕⊕⊕◯ MODERATE	CRITICAL

1 unclear risk of bias in the domain "incomplete outcome data" | 2 VE estimate for age group >=65 years | 3 high risk of bias | 4 inconsistency between study results