



Suboptimal vaccination coverage with influenza, pneumococcal and herpes zoster vaccines among adult patients with autoimmune inflammatory rheumatic diseases in a nationwide health care plan

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Background: Autoimmune inflammatory rheumatic diseases (AIIRD) increase the susceptibility to infections.

Immunization against vaccine-preventable diseases is recommended for patients with AIIRD by most international medical societies. Yet, evidence points to a suboptimal adherence to vaccination recommendations among the AIIRD population.

Objectives: To assess the real-world vaccination coverage with influenza, pneumococcal and herpes zoster (HZ) vaccines among adult patients with AIIRD in a real-world setting.

Methods: A retrospective cross-sectional study was performed using the databases of Maccabi Healthcare Services (MHS), a large healthcare provider in Israel. The AIIRD population was defined as adults (≥ 18 years old) alive on 30/04/2019, with ≥ 12 months of continuous enrolment, diagnosed with rheumatoid arthritis (RA), psoriatic arthritis (PsA) and systemic lupus erythematosus (SLE). Point prevalence rates among MHS members were age-adjusted. Optimal coverage was defined as vaccination documented in the past year for influenza and 5 years for pneumococcal (PPSV23 and/or PCV13) and HZ vaccines.

Results: A total of 14,528 AIIRD patients were included. Overall, 41.0%, 17.5%, 4.8%, and 3.6% of AIIRD patients had optimal influenza, PPSV23, PCV13 and HZ vaccination coverage, respectively (Table 1). The highest age-specific vaccination rates were observed in age group 75-79y for influenza, 65-69y for PPSV23, 55-59y for PCV13, and 70-74y for HZ respectively. Influenza vaccination was significantly ($p < 0.05$) associated with older age ($\geq 60y$) after adjusting for patient characteristics and potential confounders. Among the elderly ($\geq 65y$), AIIRD patients had comparable vaccine coverage rates to those reported in the general population in Israel (1) for influenza (past year: 63.2% vs. 61.0%) and PPSV23 (past 5y or at least once since age 65y: 83.4% vs. 77.7%). The uptake of PCV13 and HZ vaccines was remarkably low in all age groups.

Conclusions: This study provides real-world evidence of suboptimal influenza, pneumococcal, and HZ vaccination coverage of patients with AIIRD, in particular among younger adults. There remains significant scope to improve uptake of vaccinations in patients with AIIRD.

References

1. Calderon-Margalit R, Abu-Ahmed W, Ben-Yehuda A, et al. National Program for Quality Indicators in Community Healthcare in Israel, Report 2013-2017. Jerusalem: School of Public Health and Community Medicine, Hebrew University-Hadassah; 2017.

Table 1. Vaccination coverage with influenza, pneumococcal and herpes zoster vaccines among adults diagnosed with autoimmune inflammatory rheumatic diseases (30/4/2019).

Vaccine	Coverage (look-back)	RA	PsA	SLE	Mixed AIIRD	Total AIIRD
Age $\geq 18y$: Total N		6,932	4,395	1,951	1,250	14,528
Influenza	Past year*	45.1%	36.2%	33.7%	46.0%	41.0%
	Ever	74.2%	65.8%	65.8%	74.7%	70.6%
PCV13	Past 5y*	5.1%	4.1%	4.0%	6.6%	4.8%
	Ever	5.2%	4.1%	4.2%	6.6%	4.8%
PPSV23	Past 5y*	19.6%	16.2%	12.6%	17.7%	17.5%
	Ever	49.4%	31.1%	29.3%	42.6%	40.6%
PCV13+ PPSV23	Past year	0.8%	0.8%	0.5%	0.6%	0.7%

	Past 5y*	2.9%	2.3%	2.1%	2.8%	2.6%
	Ever	4.4%	3.0%	3.3%	5.0%	3.9%
Age ≥50y: Total N		5,514	2,954	962	912	10,342
HZ	Past 5y*	4.0%	3.6%	2.0%	3.1%	3.6%

AIIRD, autoimmune inflammatory rheumatic diseases; HZ, herpes zoster; Mixed AIIRD, >1 diagnosed AIIRD (defined here as RA, PsA, SLE); PCV13, pneumococcal conjugate vaccine; PPSV23, pneumococcal polysaccharide vaccine; PsA, psoriatic arthritis; RA, rheumatoid arthritis; SLE, systemic lupus erythematosus. *Defined as optimal vaccination coverage.