

Changes in invasive pneumococcal diseases in France after extension of vaccination recommendations to high risk populations

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Background

Pneumococcal vaccination (PCV13/PPSV23) recommendations were extended to populations at risk of invasive pneumococcal disease (IPD) in 2017 in France, including diabetes, chronic respiratory/cardiac/renal/liver diseases, whereas the previous indications were limited to high-risk patients (e.g. immunocompromised). The aim was to investigate the effect on IPD characteristics.

Methods

We included nonmeningitis IPD cases, from 25 acute-care hospitals between 2014 and 2022 (NCT03983616). Characteristics, clinical severity and serotypes distribution were compared between the pre (2014-2017) and post (2018-2022) recommendation revision periods.

Results

From 2014 to 2022, 1931 IPD cases were included, 903 in the pre and 1028 in the post-recommendation periods. Most cases were aged ≥ 65 years (65%) during both periods. A large part of cases were at risk (702/1681, 43%) or high risk (682/1681, 41%) among the cases with a known risk status, similarly for both periods (respectively $p=0.178$ and $p=0.238$). Only 7% had been vaccinated against pneumococcus, with no significant difference between the two periods ($p=0.626$). The proportion of severe cases (47%) did not significantly changed between the two periods ($p=0.823$). In-hospital deaths decreased slightly in the post-recommendation period (22% vs 19%; $p=0.061$). Among the 1854 cases with a known serotype, 499 (27%) had a PCV13 serotype, 823 (44%) had a PPSV23nonPCV13 serotype, with no significant difference between periods. A large part of cases had a PCV15 (35%) or PCV20 (61%) serotype.

Conclusion

Despite the extension of pneumococcal vaccination recommendations to populations at risk of IPD in France, part of severe IPD remained high with insufficient immunization. This underlines the need for new strategies to improve vaccination coverage in at-risk populations.

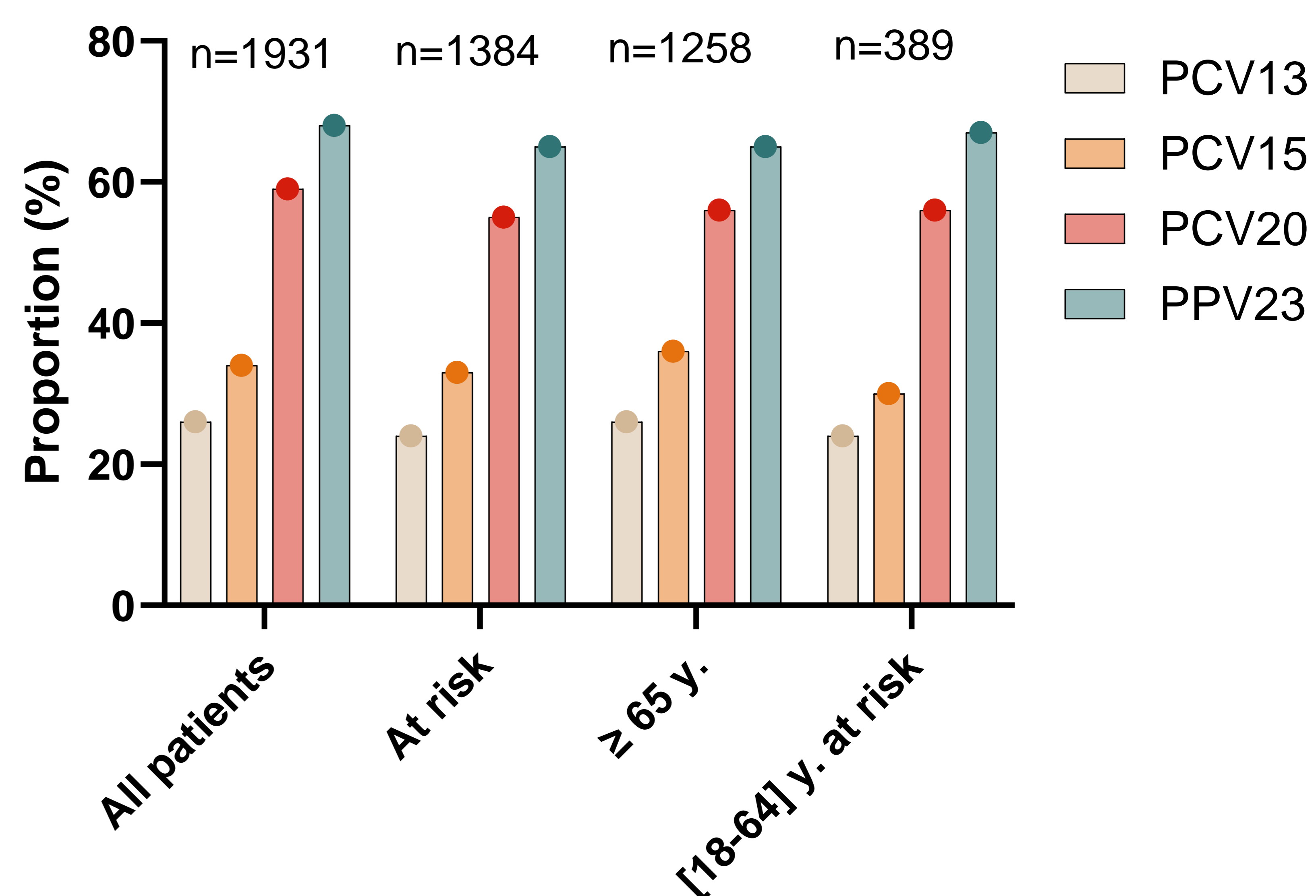
Source :

Avis relatif aux recommandations vaccinales contre les infections à pneumocoque pour les adultes. HCSP 2017
Open Forum Infect Dis. 2019 Nov 30;6(12):ofz510
CNRP (Centre National de Référence du Pneumocoque), France
ORP (Observatoires Régionaux du Pneumocoque), France

Table: characteristics of IPD patients according to the period (pre vs. post recommendations), SIIPA, CNR-ORP, France, 2014-2022

	2014-2017		2018-2022		p-value
	903		1028		
Age ≥ 65 y.	601	67%	657	64%	0.224
Female sex	425	47%	430	42%	0.021
Pneumococcal vaccination	63	7%	71	7%	0.626
Comorbidities					
At risk patients	318	35%	384	37%	0.178
Heart failure	163	18%	168	16%	
Coronary insufficiency	94	10%	109	11%	
Chronic lung disease	185	20%	224	22%	
Chronic liver disease	64	7%	70	7%	
Chronic renal failure	100	11%	118	11%	
Diabetes	165	18%	220	21%	
High risk criteria	334	37%	348	34%	0.238
Solid tumors (< 5 years)	156	17%	187	18%	
Hematological malignancy (< 5 years)	115	13%	95	9%	
Immunosuppressive drugs	92	10%	132	13%	
Other immune deficiency	70	8%	68	7%	
Osteo-meningeal breach	2	0,2%	3	0,3%	
Severity and outcomes					
Severe presentation	428	47%	485	47%	0.823
Septic shock	169	19%	179	17%	0.435
Mechanical ventilation	188	21%	247	24%	0.089
Intensive care unit admission	275	30%	296	29%	0.400
In-hospital mortality	200	22%	191	19%	0.061
Vaccine serotypes					
PCV-13 serotype	246	27%	253	24,6%	0.095
PPV-23 serotype only	352	39%	471	45,8%	0.010
PCV13 or PPV23 serotype	598	66%	724	70,4%	0.230

Proportion of preventable cases by age and risk according to vaccine serotype group, SIIPA, CNR-ORP, France, 2014-2022



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