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Médecine et maladies infectieuses 43 (2013) 22–27

Original article

Streptococcus pneumoniae vaccinal coverage in hospitalized elderly patients in France☆

Couverture vaccinale contre Streptococcus pneumoniae des sujets âgés hospitalisés en France

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Received 17 April 2012; received in revised form 25 September 2012; accepted 5 November 2012
Available online 13 December 2012

Abstract

Background. – In France, there is little data on vaccinal coverage in elderly people at risk for invasive pneumococcal infections (IPI).

Objective. – The study objective was to assess the pneumococcal vaccination coverage and traceability in hospitalized elderly people (>75 years of age).

Method. – A multicentric point prevalence survey was made on volunteers over 75 years of age, hospitalized in internal medicine, geriatrics, and infectious diseases units.

Results. – Nine hundred and three patients in 63 units of 28 hospitals were included (mean 85 years of age) in the study between April and May 2011. Ten percent (93/903) were vaccinated against the pneumococcus. Thirty-eight percent of the patients had at least one risk factor for IPI and 20.5% of these had been vaccinated. There was a traceability back-up in 59% of the cases. Vaccination was not considered by the hospital for 83% of patients with IPI risk factor but not vaccinated (task delegated to the family physician in 50% of the cases).

Conclusion. – Vaccination coverage against the pneumococcus in France is very low in hospitalized patients over 75 years of age even though more than one out of three presents at least one risk factor for IPI. The rate of traceability is also poor. Hospitalization should be an opportunity to offer pneumococcal vaccination to elderly patients at risk for IPI in France because of unclear recommendations for elderly individuals and lack of political will to improve vaccination coverage.

Keywords: Elderly individuals; *Streptococcus pneumoniae*; Coverage; Invasive pneumococcal infection

Résumé

Introduction. – Il existe peu de données sur la couverture vaccinale antipneumococcique des sujets âgés à risque d'infections invasives à pneumocoque (IIP) en France.

Objectifs. – Évaluer la couverture vaccinale antipneumococcique et sa traçabilité chez des sujets âgés hospitalisés.

Méthodes. – Enquête « un jour donné », multicentrique incluant les patients de plus de 75 ans, hospitalisés dans des services de médecine, maladies infectieuses et gériatrie aiguë de centres hospitaliers (CH) volontaires.

Résultats. – D'avril à mai 2011, 903 patients ont été inclus (63 services de 28 CH) de 85 ans d'âge moyen : 10 % étaient vaccinés contre le pneumocoque. Trente-huit pourcent des patients avaient au moins un facteur de risque (FDR) d'IIP : le taux de vaccination dans ce groupe était de 20,5 %. Il existait un support de traçabilité dans 59 % des cas. Le taux de vaccination ne différait pas selon le lieu de vie habituel. Pour 83 % des patients avec FDR d'IIP mais non vaccinés, la vaccination n'était pas envisagée par l'hôpital (tâche déléguée au médecin traitant dans 50 % cas).

☆ Presented as a poster at the 15th Annual Conference on Vaccine Research, Atlanta, May 2012.

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0399-077X/$ – see front matter © 2012 Elsevier Masson SAS. All rights reserved.
http://dx.doi.org/10.1016/j.medmal.2012.11.001

Conclusion. – La couverture vaccinale contre le pneumocoque (10 %) est faible chez les patients très âgés hospitalisés malgré la présence d'un FDR d'IIP chez un tiers d'entre eux. La traçabilité est mauvaise. En raison des recommandations vaccinales contre le pneumocoque limitées pour les personnes âgées en France et en l'absence de volonté politique claire afin d'améliorer la couverture vaccinale, l'hospitalisation devrait être l'occasion d'offrir la vaccination chez les personnes âgées ayant des facteurs de risque pour les IIP.

Mots clés : Sujets âgés ; *Streptococcus pneumoniae* ; Couverture vaccinale ; Infections invasives à pneumocoque

1. Introduction

Streptococcus pneumoniae remains the most often involved pathogenic agent in elderly patients presenting with acute community acquired pneumonia (30 to 50% of lower respiratory tract infections) [1]. The incidence of invasive pneumococcal infections (IPI) is 3 to 10 times higher in elderly patients, 75 years of age or more, than in young adults [2–4].

The death rate related to IPI increases with age, from to 20% at 65 years of age to 40% after 85 years of age [5]. IPI could be the cause of 6000 to 15,000 deaths per year in France, 95% of which in patients 60 year of age or more, despite antibiotherapy [6].

The polysaccharide 23-valent, anti-pneumococcal vaccine (APV) prevents 50 to 80% of IPP in immunocompetent individuals [7]. In France APV is recommended by the High Council for Public Health (French acronym HCSP) for adults and children more than 5 years of age, presenting with a disease with a risk of IPP (functional asplenia or splenectomy, homozygotic sickle cell disease, HIV infection what ever the immunological and virological status, nephrotic syndrome, respiratory insufficiency, cardiac insufficiency, alcohol addiction avec chronic liver disease, history of lung infection or invasive pneumococcal infection) and should be proposed on admission in healthcare institutions or shelters [8]. Nevertheless, despite the strong prevalence of acknowledged risk factors in France, APV coverage in patients more than 65 years of age is inferior to 20% both in community and in dependent old people's home (French acronym EHPAD) where it is estimated at 13% [9–13]. The traceability of vaccination is rarely assessed. Hospital admission seems to be a good occasion to check an elderly patient's vaccinal status and the reasons for non-vaccination. We report the results of an observational study on anti-pneumococcal vaccinal coverage of hospitalized elderly patients.

2. Patients and methods

The main study objective was to assess the pneumococcal vaccination coverage in elderly people (>75 years of age) hospitalized in short stay hospitalization units (internal medicine, polyvalent medicine, infectious diseases, geriatric medicine).

The secondary objective was to assess the traceability of vaccination in elderly individuals.

We included all patients more than 75 years of age, hospitalized in internal medicine, polyvalent medicine, infectious diseases, and geriatric medicine units of volunteer French hospitals. We excluded patients 75 years of age and more hospitalized in post-care and rehabilitation units, dependent old people's home, or long stay hospital units.

The hospital centers were contacted by mail to SPILF (French Infectious Disease Society) and the clinical geriatrics and gerontology society (SGGC) members. Only volunteer centers participated.

A multicentric point prevalence survey was performed; the investigators were free to choose the day in the selected period (April to May 2011). All patients eligible during the survey period were included. A questionnaire was used to collect demographic data (sex, age, habits), medical data (cause of hospitalization, underlying diseases) and data on anti-pneumococcal vaccination: indication, date of vaccination, and traceability of information on vaccination. The data was declarative, collected either with the patient and/or his relatives, and/or the family physician. The family physician was not called systematically and traceability was also declarative. Patients who were not able to answer the questionnaire (cognitive disorders and/or consciousness disorder), and for whom neither family nor family physician could be reached, were not included in the study.

The main criterion assessed was the prevalence of anti-pneumococcal vaccination in hospitalized patients more than 75 years of age and with an indication for this vaccination.

The other analyzed parameters analyses concerned the traceability of this vaccination in this population.

The quantitative data was expressed in average $\pm$ 1 SD, the qualitative data in number and percentage. Student's t test was used to compare the average of two groups. The comparison of two qualitative variables was made using χ^2 test. A $P < 0.05$ was considered as statistically significant. The statistical analysis was made with the SAS v 9.3 software (SAS Institute Inc., USA).

3. Results

The survey was made from April 5 to May 29, 2011. Most inclusions were made from April 11 to 21, 2011.

Thirty-three hospital centers volunteered to take part in the survey, 28 (63 units) actually participated. The geographical distribution of centers is listed in Appendix A.

The distribution of patients according to hospital unit specialty is listed in Table 1. The number of participating unit per center was on average 2.3 (1 to 4). One thousand eight hundred and thirteen patients were hospitalized on the survey day in participating units including 960 aged 75 years or more. Fifty-seven patients aged 75 years or more eligible on the survey day could not be included in the study: 28 because of cognitive and/or consciousness disorders and because neither relatives nor family physician could be questioned; 29 could not be included