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論文審査の結果の要旨及び担当者

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論文審査の結果の要旨

肺炎球菌は成人において市中肺炎の主な原因菌であるが、その大半は菌血症を伴わない肺炎である。一方で本菌は血液中に侵入し菌血症、髄膜炎といった侵襲性肺炎球菌感染症（Invasive pneumococcal disease: IPD）を引き起こす場合がある。海外からは７価肺炎球菌結合型ワクチン(heptavalent pneumococcal conjugate vaccine：PCV7)の小児に対する定期接種導入後にPCV7含有血清型肺炎球菌の小児における鼻腔保菌が著しく減少し、それに伴うPCV7含有血清型による小児IPDが減少、またその集団免疫効果によるPCV7含有血清型の成人IPDの減少、そして同時に非ワクチン含有型による小児、成人IPDの緩やかな増加が報告されている（血清型置換）。本邦では、小児に対してPCV7が2009年10月に承認され、2013年4月から定期接種化、さらに2013年11月からPCV7はPCV13に切り替わった。本邦において小児PCV導入後の小児での血清置換の報告があるものの、小児PCV導入後の成人IPDの臨床像及び血清型分布は明らかになっていない。本論文は日本における成人IPD患者の多くは免疫不全を含む基礎疾患を有していたこと、成人IPDの原因菌におけるPCV含有血清型の割合の低下は小児PCV導入にともなう間接効果である可能性を報告した貴重な論文であり、学位に値するものと認める。

論　文　内　容　の　要　旨
Synopsis of Thesis

氏　名 Name	福住宗久
論文題名 Title	Invasive pneumococcal disease among adults in Japan, April 2013 to March 2015: disease characteristics and serotype distribution （日本における成人侵襲性肺炎球菌感染症の疫学, 2013年4月～2015年3月：患者の特徴と血清型分布）

論文内容の要旨

〔目　的(Purpose)〕

In Japan, the clinical characteristics and recent serotype distribution among adult patients of invasive pneumococcal disease (IPD) have not been fully investigated since the introduction of the pneumococcal conjugate vaccine (PCV) in children. From November 2010, PCV7 was encouraged by an official program, funded by government, subsequently included in the routine schedule in April 2013, and replaced with a PCV13 in November 2013.

〔方法ならびに成績(Methods/Results)〕

Between April 2013 and March 2015, patients with IPD older than 15 years were evaluated based on the enhanced national surveillance in ten prefectures of Japan. The serotype distribution of the isolates was analyzed in these patients. The analysis included 291 patients: 107 patients (37%) were female and the median age was 70 years. Of 281 patients with available data, 202 (72%) had underlying diseases, including 107 patients (38%) with immunocompromised status. The case fatality proportion for all case was 20%. In subgroup analysis, the case fatality proportion (29%) in immunocompromised patients was much higher than that (0–16%) in each age group of nonimmunocompromised patients (15–39 years, 40–64 years, and ≥ 65 years). While the proportion of bacteremia without any focus (27%) was higher than that (8–10%) in nonimmunocompromised patients, the proportions of vaccine types (PCV13, 32%; PPSV23, 51%) of the causative isolates were lower than those in each age group of nonimmunocompromised patients. Among 291 isolates, the most frequent serotypes were 3 (17%), 19A (13%), and 22F (10%). Twelve percent of the isolates were PCV7 serotypes, 46% were PCV13 serotypes, and 66% were PPSV23 serotypes.

〔総　括(Conclusion)〕

The majority of adult patients of IPD had underlying diseases, including immunocompromised conditions. A low proportion (12%) of PCV7-type IPD was observed in this population where PCV7 for children had been included in the routine immunization schedule.