Reviewer's report

Title: Burden of pneumonia in elderly in-patients: a classificatory algorithm based on administrative data.

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Reviewer: Masafumi Seki

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Comments for authors

Journal: BMC Infectious Diseases
Type of article: Research article
Title: Burden of pneumonia in elderly in-patients: a classificatory algorithm based on administrative data
Authors: Cascini S et al.

Comments:
The authors retrospectively investigated the etiology of 26239 pneumonia patients (65 y.o.>) in their region of Italy by validation of ICD-9-coding algorithm. They found that the proportion of male were higher than female in all category of pneumonia, such as CAP, NP, and HCAP. In addition, HCAP patients were more severe, and showed longer hospital stay, compared with NP/CAP patients. They concluded that administrative database was useful and category of HCAP might be better to be handled as a distinct category. However, its reason/mechanisms were still unknown, and critical information of HCAP patients was very limited in this study

Major:

1 First of all, contents of HCAP patients were too unclear. HCAP were usually include the old person’s pneumonia (=aspiration pneumonia, by host factor, usually related with ‘stroke’) and pneumonia due to Multi-drug resistant pathogens (=MDR pneumonia, by pathogen factor). Which was dominant in this data? (Maybe aspiration?)

Furthermore, these ratio and number of HCAP were vastly dependent on the specific environment of region, facilities, and countries. For example, HCAP in US (MDR dominant) and Japan (aspiration dominant) were very different because of difference of insurance system, ratio of MDR, and population of old people. The author should discuss and showed more detailed information about them in Lazio, Italy, compared with other contries.

2 According to #1, the number of HCAP patients may be usually more than PNP and CAP. Why HCAP patients were less than those of PNP and CAP? Were the old guys in Italy in their own houses, and carry to hospital? Therefore, did they calculated not HCAP, but CAP? On the other hand, length of stay was < 10days
in HCAP might be very short, suspected the young guys who had common cold / traffic accident recently were also included the HCAP, too?

3 In page 7, COPD and respiratory failure was more in HCAP/CAP than PNP? It maybe strange.

4 In page 9, the authors concluded this study clearly demonstrated that the three subtypes of pneumonia identified on the basis of administrative data correspond to distinct clinical and epidemiological entities, but look similar in Table 1.

5 According to #4, the authors should add’ p value’ in each item in Table 1

Minor:
1. Native speaker’s check should be received. For example, in page 2, pneumonia is ? had been classified? , In page 7, amongst?

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
None