



To code or not to code chronic pulmonary aspergillosis associated malnutrition in PMSI database: that is the problem...

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Received: 29 Oct 2021
Accepted: 3 Nov 2021

Reply to S. Jouneau and co-workers:

We read with interest the letter from S. Jouneau and co-workers titled “*To be malnourished or not to be malnourished: that is the question!*”, referencing our study in which we overviewed the epidemiology and prognostic of chronic pulmonary aspergillosis (CPA) in France [1]. Based on the French nationwide administrative hospital database (PMSI), which is designed to include discharge abstracts for all inpatients admitted to public and private hospitals in France, we reported that malnutrition is one of the most frequent underlying conditions concerning 38 to 44% of CPA patients from 2014 to 2018. Moreover, in CPA incident cases, malnutrition increased significantly in-hospital mortality at their first hospitalisation but also at 1 and 5 years, in multivariate analyses.

S. Jouneau and co-workers highlighted the risk of malnutrition rates underestimation using PMSI database. We agree that the malnutrition rate we reported in CPA patients is lower than the rate suggested by body mass index (BMI) data shown in previous retrospective (BMI 20.8 kg·m⁻²) and prospective (BMI 17.3 kg·m⁻²) studies performed in France [2, 3]. However, all CPA patients in these studies received an antifungal treatment which it was not the case for those in the PMSI cohort. Contrary to the assertion of S. Jouneau and co-workers, speculated malnutrition diagnosis was not limited to BMI below 21 kg·m⁻² as PMSI coding follows rules from French Hospital Methodological Guidelines. The malnutrition diagnosis we used was composite including criteria observed among the following: weight loss compared to a value in a previous medical record, BMI less than or equal to 17 or 21 kg·m⁻² (according to patient’s age), or low albuminaemia and prealbuminaemia plasmatic concentrations. This guideline of course did not prevent coding bias or risk of underestimation. Nonetheless we assume that the risk of underestimation is lowered during the study period (2009–2018) particularly since 2016 when hospital fee schedule was revised, introducing an impact of malnutrition codes in hospital tariff. This assumption is supported by the malnutrition rate we reported in the 5 years preceding the CPA diagnosis during the period 2014 to 2018. It was around 38% before 2016 and significantly increased to around 45% after 2016 (p<0.01). To go further we have renewed the survival analysis according to the severity of malnutrition (moderate, ICD-10 codes E440; severe, ICD-10 codes from E40 to E43) in CPA incident cases hospitalised from 2013 to 2017. Multivariate pooled analysis revealed graduate risk of in-hospital mortality from 1.8 (95% CI, 1.3–2.5; p<0.01) to 3.3 (95% CI, 2.5–4.3; p<0.01) according to malnutrition severity (figure 1).

The risk of underestimation is a usual limit of epidemiological studies based on medico-administrative data [5, 6]. Nonetheless, concerning the French PMSI database, the quality and completeness of the coding of procedures are evaluated locally by the hospital medical information departments and at the national level by the paying organisation. Finally, these national data are used for hospitals’ budget allocation, which could indicate higher data quality in terms of coherence, accuracy and exhaustiveness. To limit the risk of overcoding, the French health insurance regularly checks coding accuracy on the basis of samples of discharge abstracts, and hospitals can be fined in case of excessive errors.

The high prevalence of malnutrition in CPA patients is related to CPA or to underlying diseases. As S. Jouneau and co-workers recalled, systematic and integrative screening of malnutrition is a crucial issue in patients with chronic lung diseases [7]. In CPA patients this screening has additional benefit to identify patients with poorer prognosis, *i.e.* those needing specific CPA treatment [4]. Nutritional care should be systematic in CPA patient with malnutrition, even if the benefit of nutritional care in CPA survival was not assessed yet.

Shareable abstract (@ERSpublications)

Malnutrition is a crucial prognostic factor in chronic pulmonary aspergillosis patients. Patient survival decreases according to malnutrition severity. <https://bit.ly/3krOBJw>

Cite this article as: Maitre T, Cottenet J, Godet C, *et al.* To code or not to code chronic pulmonary aspergillosis associated malnutrition in PMSI database: that is the problem... *Eur Respir J* 2022; 59: 2102820 [DOI: 10.1183/13993003.02820-2021].



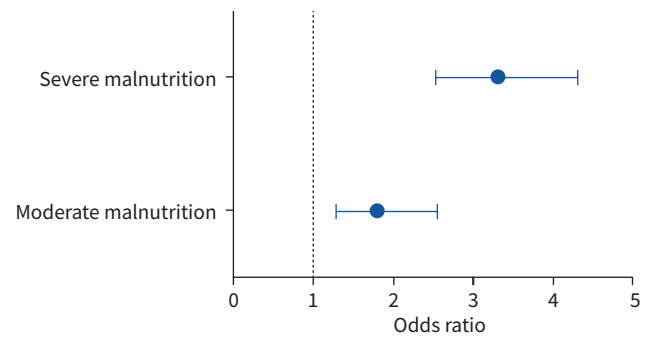




FIGURE 1 Multivariate pooled analysis of mortality at the first hospitalisation over 5 consecutive years in a cohort of chronic pulmonary aspergillosis patients hospitalised from 2013 to 2017, according to malnutrition severity.

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Conflict of interest: T. Maitre has nothing to disclose. J. Cottenet has nothing to disclose. C. Godet received consultancy or speaker fees and travel support from Pfizer, Astellas, Gilead, MSD, SOS Oxygene, Elivie, Pulmatrix and ISIS Medical. A. Roussot has nothing to disclose. N. Abdoul Carime has nothing to disclose. V. Ok has nothing to disclose. A. Parrot has nothing to disclose. P. Bonniaud has nothing to disclose. C. Quantin has nothing to disclose. J. Cadranel has nothing to disclose.

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