Generalised additive model plot for the effect of stop smoking duration on the risk of developing PPCs. The $S$ in the $S$ (duration of stop smoking) represented the risk of developing PPCs, where $S$ of more than 0 indicates an increased risk and $S$ of less than 0 indicates a decreased risk. The results showed that patients with a smoking cessation of more than 93 days may have a lower risk of PPCs. PPCs, postoperative pulmonary complications.

elective oesophagectomy, Yoshida et al. found that a preoperative smoking cessation of more than 90 days was needed to reduce morbidities after surgery. In the present study, a general additive model was used to determine the relationship between the duration of smoking cessation and the risk of PPCs and we found that a minimum duration of 93 d was required, a result similar to that of Yoshida et al. Two meta-analyses also show that a longer duration of smoking cessation is associated with a lower risk of PPCs. These findings suggest that a short period of smoking cessation (median 4 weeks before surgery) does not restore a normal respiratory system.

The study has several limitations. First, as a secondary analysis, the fixed patient population has the potential to produce bias. Second, the data on preoperative smoking were collected according to reports of patients themselves, raising the possibility of recall bias. Third, the sample size in this study was not designed for detecting the association between smoking status and the risk of PPCs. For example, only 49 patients had a smoking cessation of 93 days or less; and among them, only 13 patients developed PPCs. This lowered the power of the analyses and so results here may only be considered to be exploratory.

In conclusion, for elderly patients with a smoking history scheduled to undergo noncardiac, nonneurological surgery, a preoperative smoking history, a high smoking index (>8 pack-years) or a short duration smoking cessation (≤93 days) was associated with an increased risk of PPCs. A smoking cessation of more than 93 days may be helpful to reduce PPCs, but requires further study.

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Capillary glucose meters cannot substitute serum glucose measurement to determine the cerebrospinal fluid to blood glucose ratio
A prospective observational study
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Editor,
Bacterial meningitis is a life-threatening infectious disease requiring prompt recognition and treatment.

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The gold standard for diagnosing meningitis is examination of the cerebrospinal fluid (CSF). However, no CSF parameter provides an absolute indication of cause (for example, an elevated white blood cell count and high protein levels are nonspecific features of the CSF after neurosurgery). A low CSF glucose concentration is an important finding for the investigation: a CSF/serum glucose ratio cut-off of 0.36 is both highly sensitive and specific (both 93%) for diagnosing bacterial meningitis. The CSF glucose concentration is influenced by the serum concentration and, therefore, cannot be independently interpreted without the CSF/serum glucose ratio. Nevertheless, recent guidelines have emphasised that serum glucose measurements are often not performed in clinical practice, leading to suboptimal analysis that serum glucose readings are often lacking during CSF examinations. This has been addressed in the clinic by measuring the capillary glucose value using a bedside glucometer, at the time of the lumbar puncture, to calculate the CSF/capillary glucose ratio. However, this practice has not been tested nor validated. We aimed to evaluate whether the CSF/capillary glucose ratio is equivalent to the CSF/serum glucose ratio.

We performed a prospective study and analysed CSF samples in patients hospitalised in two ICUs during an 8-month period. Venous and capillary blood samples were taken within one hour before/after CSF sampling. Glucose (CSF and serum) was measured by the central laboratory, whereas capillary glucose was measured by a point-of-care glucometer (FreeStyleOptium; Abbott, Doncaster, Victoria, Australia). The results are presented according to the Bland–Altman method. We calculated the bias between paired glucose ratios (CSF/capillary glucose–CSF/serum glucose), the limits of agreement. We assessed if the bias was influenced by the range of measurements by performing the linear regression of the difference versus average and calculating the coefficient of determination ($R^2$) from the Pearson correlation coefficient. We calculated the mean percentage error to evaluate if the magnitude of errors between the two techniques had clinical importance. The mean percentage error was derived by dividing the confidence interval (CI) obtained by the Bland–Altman method (difference between the lower and upper limits of agreement) by the overall mean value of the CSF/serum glucose ratio obtained with the central laboratory. Ethical approval for this study (Ethical Committee No. 2015-042) was provided by the Ethical Committee ERERC of Centre Val de Loire, Tours, France (Chairperson Dr B. Birmele) on 16 October 2015. All patients included in this study were personally informed by a written document about the treatment of the data, as well as their right to object to the study and obtain access to the data, according to articles L.1121-1 and R1121-2 of the French Public Health Code, and gave their consent.

We analysed 129 CSF samples (50 (39%) obtained by lumbar puncture, 79 (61%) obtained by ventricular external drain) in 86 patients. The median age was 62 (interquartile range 52 to 72) years; men represented 56% of the patients. Bacterial meningitis was diagnosed in 13 cases (the diagnosis of bacterial meningitis was determined by two expert physicians after reviewing the entire medical chart, including the history of the clinical presentation, CSF features and CSF microbial diagnosis). Bland and Altman plots showed that the bias was 0.02, with lower and upper limits of agreement of −0.15 and 0.19 (Fig. 1). Thus, 95% of the differences from the bias between two diagnostic-methods are expected to be within a CI equal to 0.34. The mean glucose ratio was 0.6 with the gold standard methods; indeed, the percentage error was 57%. The clinical question is one of substitution: whether it is possible to measure the glucose ratio with either capillary bedside glucose or serum glucose and obtain the same results. We conclude that the variability of the method is unacceptable, and, thus, the two methods are not interchangeable.

Finally, although timely blood glucose measurement is often lacking during CSF sampling, capillary bedside glucose measurements may not be used as a surrogate of serum glucose assessment to measure the CSF/blood glucose ratio.

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