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Mean Nocturnal Baseline Impedance in Gastroesophageal Reflux Disease: Considerations on the Study by Lee et al

TO THE EDITOR: We commend the recent article by Lee et al,[1] which aimed to validate the Lyon 2.0 gastroesophageal reflux disease (GERD) consensus criteria—particularly the mean nocturnal baseline impedance (MNBI)—in a single-center Korean retrospective cohort. The study addresses an important question regarding the cross-ethnic applicability of GERD diagnostic thresholds and adds meaningful data from an Asian cohort. While we commend the authors for their efforts, we would like to offer several observations that we believe are critical to the interpretation and clinical translation of their findings.

First, the authors propose a new MNBI threshold (2167 Ω) derived solely from symptomatic individuals, without the inclusion of healthy asymptomatic controls. The absence of normative impedance data from a physiologically normal reference group limits the external validity of this proposed threshold. In particular, without knowing the upper and lower bounds of MNBI values in healthy Korean individuals, it is difficult to determine whether this cut-off meaningfully separates physiologic from pathologic reflux, particularly when reclassifying "borderline" GERD cases. In fact, a Chinese study reported a lower cutoff (1764 Ω) to differentiate GERD patients from healthy controls, underscoring that the value proposed by Lee et al[1] may not be generalizable across Asian populations.[2]

Second, the authors reclassify patients with Los Angeles (LA) grade A esophagitis as non-GERD, which may not align with the original Lyon 2.0 framework. While LA grade A esophagitis is not definitive evidence of GERD, it is not sufficient to exclude it either. According to the Lyon 2.0 consensus, LA grade A should be considered inconclusive rather than negative for GERD.[3,4] This approach is further supported by the Asia-Pacific consensus, which highlights that GERD in Southeast Asia is predominantly a mild disease, often manifesting as NERD or low-grade esophagitis.[5] Thus, downgrading LA grade A to "non-GERD" may introduce misclassification bias and affect downstream analyses of MNBI performance.

Third, the study's retrospective, single-center design and lack of standardized protocols limit its generalizability. Moreover, the cohort's high prevalence of extra-esophageal symptoms—where reflux metrics show low specificity per Lyon 2.0—complicates interpretation. Nonetheless, MNBI remains valuable: recent multicenter Italian data showed that MNBI < 1500 Ω clarified GERD diagnosis in 16.3% of patients with inconclusive acid exposure time (AET), particularly in those with extra-esophageal presentations.[6] This highlights the need for careful phenotyping and individualized interpretation of impedance metrics.

A substantial body of evidence supports the use of MNBI as a marker of mucosal integrity and chronic reflux burden. Early validation studies demonstrated that MNBI has an inverse association with acid exposure time and can distinguish GERD patients from functional heartburn, especially in cases with inconclusive or normal AET.[7-9] In particular, MNBI has shown strong predictive value for response to anti-reflux therapy and surgical outcomes. These findings have been integrated in the Lyon 2.0 consensus, which recognizes MNBI < 1500 Ω as strongly supportive of GERD and > 2500 Ω as arguing against it.[3]

MNBI is not merely a marker of acid exposure but a time-integrated measure of epithelial integrity. When used alongside AET and symptom–reflux indices, it enhances diagnostic confidence and reduces the risk of misclassification, particularly in complex clinical scenarios. Although normative values may vary across ethnicities, this warrants local validation—not dismissal of its diagnostic utility. While Lee et al[1] report a strong MNBI–AET correlation, this weakens in patients with AET > 6%, raising concerns about MNBI's reliability in overt GERD. Notably, outcome data on its impact on treatment decisions are lacking.

In conclusion, the study by Lee et al[1] offers valuable regional insight and underscores the need to tailor impedance thresholds to specific populations. However, its findings should be viewed in light of methodological limitations. MNBI is a well-validated, adjunctive marker of mucosal integrity and chronic reflux burden, with proven utility across diverse clinical contexts. Future

prospective, multicenter studies—including symptomatic and asymptomatic subjects—are essential to standardize its application and enhance GERD diagnostic accuracy globally.

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