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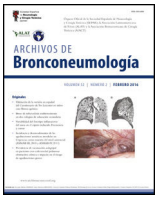

Letters to the Editor

Usefulness of Diaphragmatic Ultrasound in Preoperative Evaluation*

Utilidad de la ecografía diafragmática en la evaluación preoperatoria

Dear Editor,

We read with interest the editorial published in your journal on the usefulness of diaphragmatic ultrasound (DUS).[1] We would like to mention another use for DUS in addition to those proposed by the authors[1]: the preoperative evaluation (PE) of patients scheduled to undergo cardiovascular surgery. Measuring the diaphragmatic shortening fraction (DSF) in the preoperative period can help detect patients at increased risk of postoperative complications.[2] A DSF of less than 20% is considered low and confers a high risk. Normal DSF is 36% to 38%, and a DSF of less than 38% is associated with postoperative complications.[2,3] A reduction in DSF of more than 10% measured 1 day after surgery has also been associated with postoperative complications such as prolonged stay in the intensive care unit.[2,3]

We report the case of a 78-year-old man with diabetes mellitus, kidney failure, active smoking, and mild malnutrition who was scheduled for elective cardiovascular surgery for myocardial revascularization. In the PE, the patient had a NYHA functional class II and ASA score of II.[4] Pulmonary and cardiovascular physical examinations were normal. Spirometry was normal and oxygen saturation was 94%.

We measured the DSF of the right diaphragm in the zone of apposition using a portable multifrequency linear transducer that was placed longitudinally on the right anterior axillary line between the seventh and eighth intercostal space.[5] DSF was 40%, so we were confident that the risk of complications would be very low (Fig. 1). While the patient's characteristics did not suggest a particularly high risk, the clinical evaluation performed with predictive scales for postoperative complications indicated a moderate risk (6.6%) of myocardial infarction, pulmonary edema, ventricular fibrillation, and cardiac arrest, and a very high risk (42.1%) of perioperative pulmonary complications according to the ARISCAT scale,[4] the clinical scale that we routinely use for PE. A very high risk on the ARISCAT scale prompts us to perform other pre-surgery evaluations; however, in this case the decision was made on the basis of the DSF. This finding was reported to the cardiovascular surgeon and the decision was made to schedule surgery. DSF 24 h after surgery was 38%.[2] The patient had no immediate cardiopulmonary complications, was extubated early, left the intensive care unit on the third day, and showed very good postoperative progress.

We share the authors' view that DUS, with all its advantages, has become one of the best tools in the pulmonologist's diagnostic arsenal,[1] thanks to its non-invasive nature, low cost, wide availability, use at the bedside, absence of adverse effects, and acceptable reproducibility. It has very few disadvantages, and is an excellent addition to the clinical PE of patients with a high risk of complications estimated by ARISCAT.

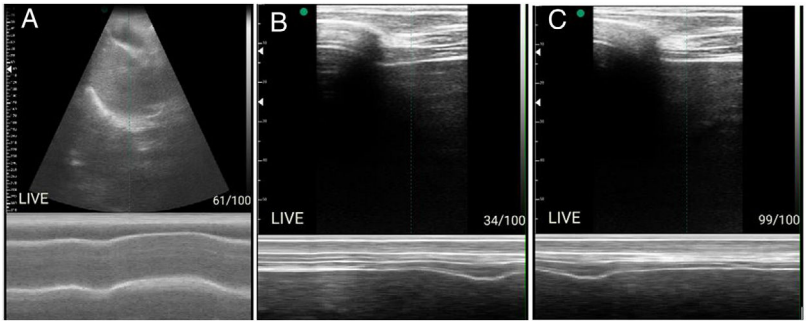

Fig. 1. (A) Diaphragmatic dome in 2D and anatomical M modes with convex transducer showing displacement of the dome in vital capacity. (B) Diaphragm in zone of apposition with linear transducer and measurement of thickness in maximum expiration. (C) Diaphragm in zone of apposition with linear transducer and measurement of thickness in minimum expiration. (B and C) For calculation of preoperative shortening fraction.

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Dual Antibiotic Therapy for Outpatient Management of Community-acquired Pneumonia?

¿Tratamiento antibiótico dual en el manejo ambulatorio de la neumonía adquirida en la comunidad?

Dear Editor:

In the updated 2020 guideline on community-acquired pneumonia, Menéndez et al.[1] still consider dual antibiotic therapy in all patients with community-acquired pneumonia (CAP), and also for outpatients. Recommendations for CAP therapy should be different, depending on whether patients require hospitalisation, are admitted to intensive units or are treated as outpatients. In line with the different recommendations published in other European countries, Spanish guidelines in primary care recommend beta-lactam therapy in monotherapy as empirical treatment.[2]

Despite citing articles highlighting the little beneficial effect of macrolides in the treatment of outpatients with CAP, Menéndez et al. conclude that in the absence of randomised clinical trials and based on clinical evidence from observational studies, the combination of a macrolide and a beta-lactam should constitute the empirical outpatient treatment regimen in patients with CAP or consider the administration of a quinolone in monotherapy. However, a recent systematic review and meta-analysis published by Horita et al.,[3] showed based on mostly observational studies that, compared with beta-lactam monotherapy, combination therapy with a beta-lactam plus macrolide may decrease all-cause mortality only in severe CAP, with an odds ratio (OR) of 0.75 (95% CI, 0.65–0.86), but not in mild to moderate CAP (OR 1.12, 95% CI, 0.87–1.45). However, this pooled OR for mild to moderate CAP comes from only three studies: two randomised clinical trials with patients with a median pneumonia severity index of 3 and one observational study (outpatients with a low severity, with a median CRB65 of 1). No randomised clinical trials comparing beta-lactam with a combination of beta-lactam and macrolides have been published in primary care. Extrapolation of the results of the group of mild to moderate CAP from this meta-analysis to patients managed in primary care might, therefore, not be straightforward. However, this is currently the only information available from patients with lower CAP severity. The authors of this meta-analysis also found significantly more adverse events in the group receiving a combination of antibiotics.[3]

Between two-thirds and 80% of patients with CAP are treated as outpatients, with a low therapeutic failure and a mortality rate of less than 1%, both in patients discharged from the emergency department or directly assessed in the primary care setting.[4] There is compelling evidence that increasing consumption of antibiotics is associated with the development of antibiotic resistance, both at the individual and the community level, and increases the likelihood of adverse events, as shown in the previous meta-analysis. Therefore, prudent antibiotic stewardship strategies, aiming to ensure the judicious use of antimicrobials by preventing their unnecessary use, should be encouraged. In addition, in the absence of a superiority of broad-spectrum antibiotic regimens, narrowing the spectrum of coverage of empirical treatments as well as shortening the duration of therapies are preferable to reduce the emergence of resistance and adverse effects.

We agree with the authors that more high quality randomised clinical trials comparing beta-lactam monotherapy with dual antibiotic regimens should be carried out in primary care. However, recommendations should be based on high quality clinical studies, not on observational analyses.[5] The few randomised clinical trials published so far do not show a clear benefit of adding macrolides to beta-lactams for the treatment of mild to moderate CAP. Therefore, we propose further studies in ambulatory CAP that allow us to reaffirm our idea that beta-lactam monotherapy should be the first line in outpatients and reserve respiratory fluoroquinolone or the combination of a macrolide and a beta-lactam if there is a documented allergy to β lactams (in this case use of fluoroquinolone), presence of significant comorbidities, therapeutic failure, or in areas with high suspicion of prevalence of highly resistant pneumococci. All this in order to reduce the antibiotic spectrum and therefore the risk of generating resistance.

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