CLINICS

READERS OPINION

Future studies should consider multiple predisposing conditions in predicting weaning failure from mechanical ventilation in patients after cardiac surgery

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Dear Editor,

We read the article titled ''High levels of B-type natriuretic peptide (BNP) predict weaning failure from mechanical ventilation in adult patients after cardiac surgery'' by Thiago Martins Lara et al. with interest (1). The authors aimed to evaluate whether serum levels of B-type natriuretic peptide are a predictor of weaning failure from mechanical ventilation after cardiac surgery. They concluded that high BNP levels are predictive of failure to wean from mechanical ventilation after cardiac surgery.

Plasma levels of BNP are increased in disorders associated with intravascular volume overload, increased central venous pressure and left ventricular dysfunction. BNP secretion is directly proportional to left ventricular wall stress and blood volume. Because of these associations, there has been much interest in using BNP as a biomarker for heart failure (2). However, high levels of BNP are present in many cases for reasons unrelated to cardiac diseases.

In several studies, BNP levels were higher in women than in men, independent of age. Although the reason for this difference is unknown, it is believed that estrogen may play a role. Furthermore, levels of BNP increase with age, and this difference is not associated with ''age-related'' diastolic dysfunction in either sex (3). Obese individuals have low circulating natriuretic peptide levels, and diabetes mellitus is also associated with low plasma levels of natriuretic peptide (4).

In addition, elevated BNP levels may be observed in many diseases associated with hypervolemia, such as chronic renal failure, chronic liver disease and hyperaldosteronism (5). Furthermore, respiratory conditions, such as pulmonary embolism and chronic obstructive pulmonary disease, are associated with high levels of BNP in the absence of left heart failure.

One of the most important conditions associated with elevated BNP levels is sepsis. Many studies have shown significantly higher BNP levels in patients with sepsis, and this effect was not related to myocardial dysfunction (6).

In conclusion, high levels of BNP are presented as a predictive factor for failure to wean from mechanical ventilation after cardiac surgery in the study by Thiago Martins Lara et al. However, because BNP levels may be affected by many factors, the significance of those risk factors in weaning from mechanical ventilation after cardiac surgery should be considered in future large-scale prospective randomized clinical trials.

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