Acid-base balance in acute panic attack

Sir, Ueda et al. reported an exaggerated compensatory response to acute respiratory alkalosis in patients with acute panic attacks seen in the acute care setting [1]. The increase in the Δ[HCO₃⁻]/ΔPaCO₂ of 0.41 mentioned is similar to that identified in patients with chronic respiratory alkalosis [2]. The reduction in plasma [HCO₃⁻] noted was accounted for by an increase in plasma lactate so it appears that these findings should be more correctly identified as a mixed acid-base disorder with both acute respiratory alkalosis and lactic acidosis. This interpretation could be strengthened with the calculation or estimation of the strong ion difference and total weak acid concentration using the principles of the Stewart approach to acid-base analysis [3]. As mentioned by the authors, the mechanism responsible for the elevation of arterial lactate noted is still not fully understood [4].

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Reply

Sir,
The co-existence of a respiratory alkalosis and a high anion gap acidosis is commonly observed in critically ill patients, such as sepsis, salicylate intoxication and coexistence of renal failure and hepatic failure [1]. It seems difficult to diagnose a mixed acid-base disorder with both acute respiratory alkalosis and lactic acidosis from an exaggerated compensatory metabolic response to acute respiratory alkalosis. In the classical classification of lactic acidosis, type A lactic acidosis is due to tissue hypoxia or acute hypoxia, whereas type B lactic acidosis is associated with drugs and toxins, and hereditary and miscellaneous disorders [2]. Panic disorder, however, is not considered to be a cause of lactic acidosis. It was reported that panic disorder patients displayed a significantly greater increase in plasma lactate in response to hyperventilation than the non-panic subjects [3]. Therefore, the acid-base disorder observed in panic disorder patients should be classified as exaggerated compensatory metabolic response to acute respiratory alkalosis [4]. We believe that our new formula in acute respiratory alkalosis in panic disorder patients may be useful for differential diagnosis between patients in the acute care setting and panic disorder patients.

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