Letter to the Editor

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Full Pattern of Urinary Prostaglandins in Bartter’s Syndrome

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Sir, males and 5 females, age range 19–56 years) and in 9 healthy controls cross-matched for sex and age. After Since Gill et al.’s [1] original description of increased urine extraction with organic solvents and silica gel col-urinary excretion of prostaglandin E2 (PGE2) in Bartter’s syndrome, many controversies have arisen about the role as previously described [4], and 6-keto-PGF1α and TxB2 played by prostaglandins in this disease, and it is still debated whether prostaglandin overproduction is a constant feature and which prostanoid is more frequently involved. Bartter’s syndrome we found a significant increase in Different prostanoids, in fact, sometimes exert opposite site effects on renal handling of electrolytes, regulation of renin release and renal action of antidiuretic hormone. In fact, PGE2 values were above the upper limit in 4 patients, no PGF2α values were above the normal range, 6-keto-PGF1α values were above the upper...
syndrome and whether a derangement in prostaglandin synthesis is in a hallmark of the disease. According to these data, we conclude that it is impossible to distinguish between healthy controls and patients.

To this end we have evaluated the urinary excretion of PGE\textsubscript{2}, PGF\textsubscript{2}\textalpha, 6-keto-PGF\textsubscript{1}\textalpha, the main metabolite of PGI\textsubscript{2}, and thromboxane B\textsubscript{2} (TxB\textsubscript{2}), the main metabolite of affected by Bartter’s syndrome in terms of a single prostaglandin excretion. However, since the trend of the mean values pointed toward an increased production of vasodilatory prostaglandins together with a reduction of TxB\textsubscript{2}, we have also considered the ratio PGE\textsubscript{2} × 6-keto-PGF\textsubscript{1}\textalpha/TxB\textsubscript{2}. This approach seems to improve the discrimination between patients and controls since the ratio fell above the upper limit (95%) of the controls in 7 patients, but it was still in the normal range in 1 (fig. 1).

However, by the use of multivariate discriminant analysis [5], taking into account all 4 prostanoids it was possible to fully discriminate between patients and controls. Moreover, the symmetry of both the weight and sign of the standardized coefficients of the discriminant

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Fig. 1. Distribution of the 4 prostanoids PGE\textsubscript{2} (a), PGF\textsubscript{2}\textalpha (b), 6-keto-PGF\textsubscript{1}\textalpha (c) and TxB\textsubscript{2} (d), and PGE\textsubscript{2} × 6-keto-PGF\textsubscript{1}\textalpha/TxB\textsubscript{2} ratio (e) in 9 healthy controls (C) and in 8 patients affected by Bartter’s syndrome (B). Cutoff values, corresponding either to the 95th or 5th percentile of the controls, are represented by dashed lines.

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function, namely 1.27 PGE$_2$, 0.70 6-keto-PGF$_{1α}$, -1.24 PGF$_{⅛}$ and -0.52 TxB$_2$, supports the conclusion that a derangement in prostaglandin synthesis is really a constant feature of Bartter’s syndrome, the prevailing picture being that of a rearrangement in prostaglandin production with a shunting toward the vasodilatory ones.


References