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INTRODUCTION

Atrial fibrillation (AF) is a common cause of emergency department (ED) visits and has a significant impact on patient well-being. The aim of this study was to assess whether there is a possible correlation between laboratory blood tests and the occurrence of atrial fibrillation.

MATERIALS AND METHODS

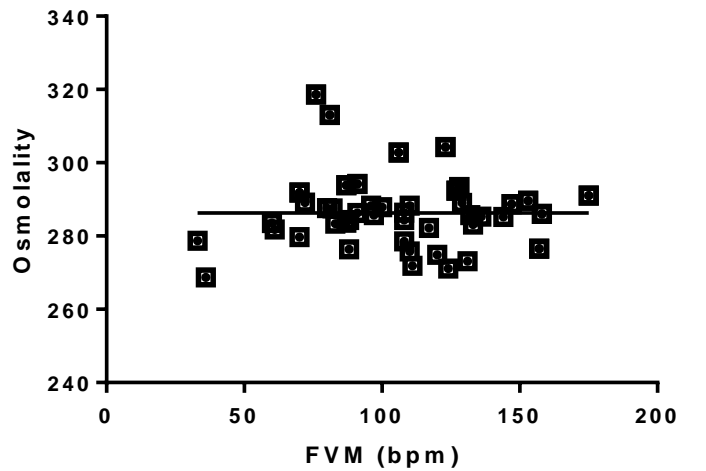
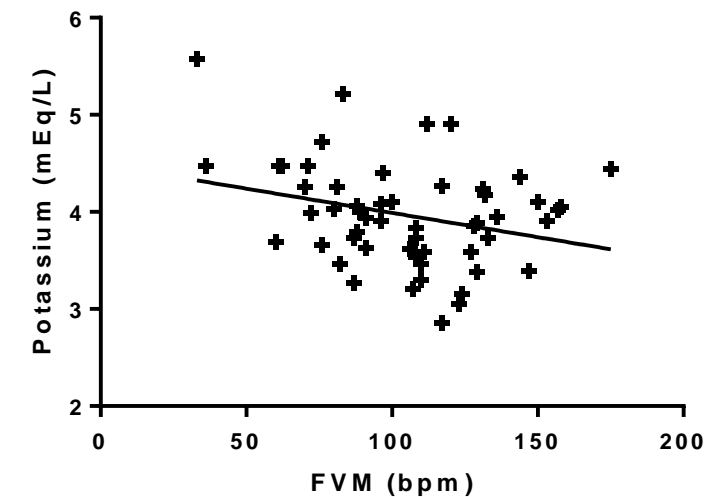
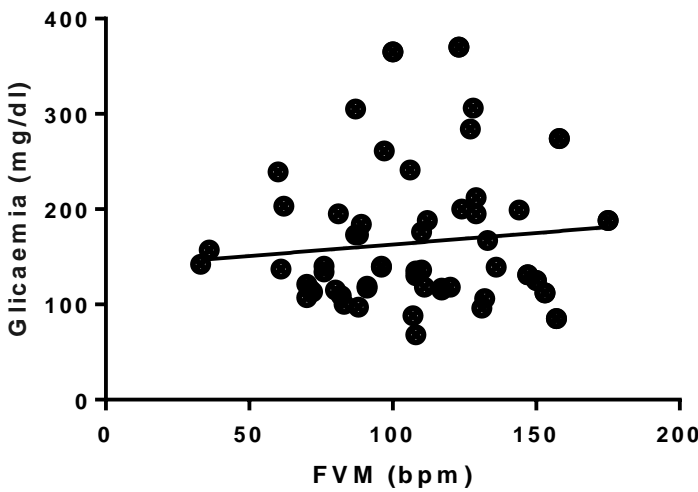
This observational study was conducted in the Emergency Departments of Molfetta Hospital and “Lorenzo Bonomo” Hospital in Andria. Adult patients (aged over 18 years) presenting to the ED with a first episode of atrial fibrillation were included. Patients with other atrioventricular arrhythmias or episodes of atrial fibrillation associated with ischemic heart disease, lung failure or sepsis were excluded. A total of 57 patients (25 males) with a mean age of 79.8 years (± 10.77) presenting with AF were analyzed (Group A). As controls, 430 patients with no AF were included (group B – 227 males, aged 59.42 ± 19.49). All All patients underwent laboratory blood tests and standard ECG, including complete blood count, renal function tests with serum electrolytes, while only group A underwent arterial blood gas analysis.

RESULTS

No statistically significant differences were observed between the two groups in terms of hemoglobin, creatinine, and sodium, levels. Group A presented a significant increase in blood glucose ($p<0.0001$) with a significant lowering in serum potassium ($p<0.0001$). Surprisingly, there was a significant decrease in osmolality in group A ($p<0.0001$). However, an indirect statistically significant correlation was found between serum potassium levels and mean heart rate ($r=-0.19$, $p=0.049$), but not with blood glucose or osmolality. This finding can be explained by the well-established association between elevated potassium levels and an increased risk of tachyarrhythmias

	Group A	Group B	
Creatinin (mg/dL)	1.16 \pm 1.02	1.05 \pm 0.85	Ns
Sodium (mEq/L)	138.8 \pm 4.49	137.5 \pm 4.01	Ns
Potassium (mEq/L)	3.93 \pm 0.59	4.14 \pm 0.56	<0.0001
Osmolality (mOsm)	286.3 \pm 9.84	298.8 \pm 13.60	<0.0001
Hb (g/dL)	11.23 \pm 1.45	12.83 \pm 2.59	Ns
Glicaemia (mg/dL)	164.0 \pm 69.32	115.5 \pm 54.97	<0.0001

Correlation in Group A
between FVM and the
parameters found
significantly different
between the two groups



CONCLUSION

The outpatient management of patients at high risk for atrial fibrillation requires careful evaluation of behavioral and biochemical risk factors. A particular attention to potassium levels could serve as a protective factor by reducing pro-arrhythmic stimuli. However, further studies involving larger patient populations are needed to confirm these findings.

Affiliazioni

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RESEARCH ABSTRACT; CARDIOLOGY