



MODERATE/SEVERE HYPOVOLEMIC HYPONATREMIA WITH URINARY SODIUM LOSS SECONDARY TO HYPOALDOSTERONISM: ANALYSIS OF 28 CASES

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INTRODUCTION

Hypoaldosteronism (HA), a cause of hypovolemic hyponatremia (HN) with urinary(U) sodium(Na) loss, is often underdiagnosed. We studied the characteristics of 28 patients with an episode of HA-induced moderate/severe hyponatremia.



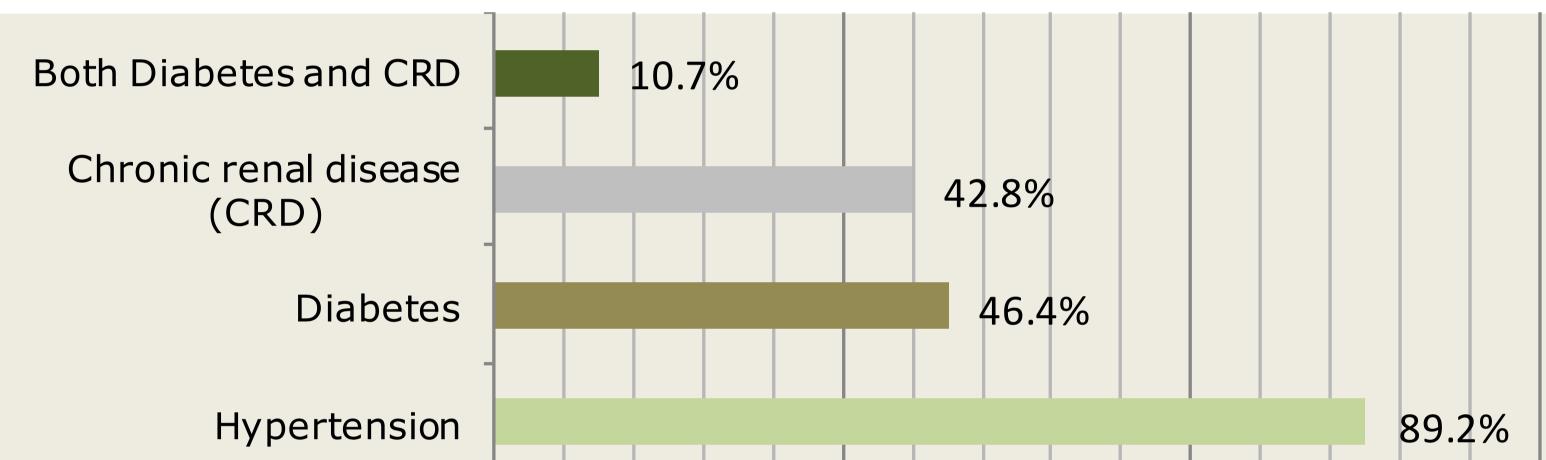
A single center, retrospective study of all 28 patients seen by Endocrinology at our general hospital between 2012-2015 with hypoaldosteronism-induced moderate/severe hyponatremia. All patients presented a Nadir serum Na (NSNa) <130 mmol/L (corrected) for total proteins and glycemia), low yugular central venous pressure, low ocular pressure, with Addison's Disease ruled out (ACTH, cortisol and/or Synacthen test). In all cases, UNa>25 mmol/L, U osmolality(Osm)> Plasma(P) Osm, the Transtubular Potassium Gradient (TTKG) < 5. Group I (10/28) had risk factors for aldosterone deficit (heparin, ARBs, ACEi, aliskiren, NSAIDs, and/or tacrolimus), Group II (2/28) risk factors for mineralocorticoid resistance (obstructive uropathy, urinary infection, renal transplant, trimetroprim, and/or spironolactone), Group III (16/28): both. Na, Potassium (K) values in mmol/L, Osm mOsm/kg. Student's T-test, X², Spearman's Rho, Kruskal-Wallis, Mann-Whitney U. Na, K in mmol/L.

RESULTS

Table 1. General Characteristics.

Sex	Males	Females		
	57,1%	42,8%		
Mean Age	71,36 years (SD 15,5)			

Graph 1. Comorbidities.



Graph 4. Aldosterone by groups.

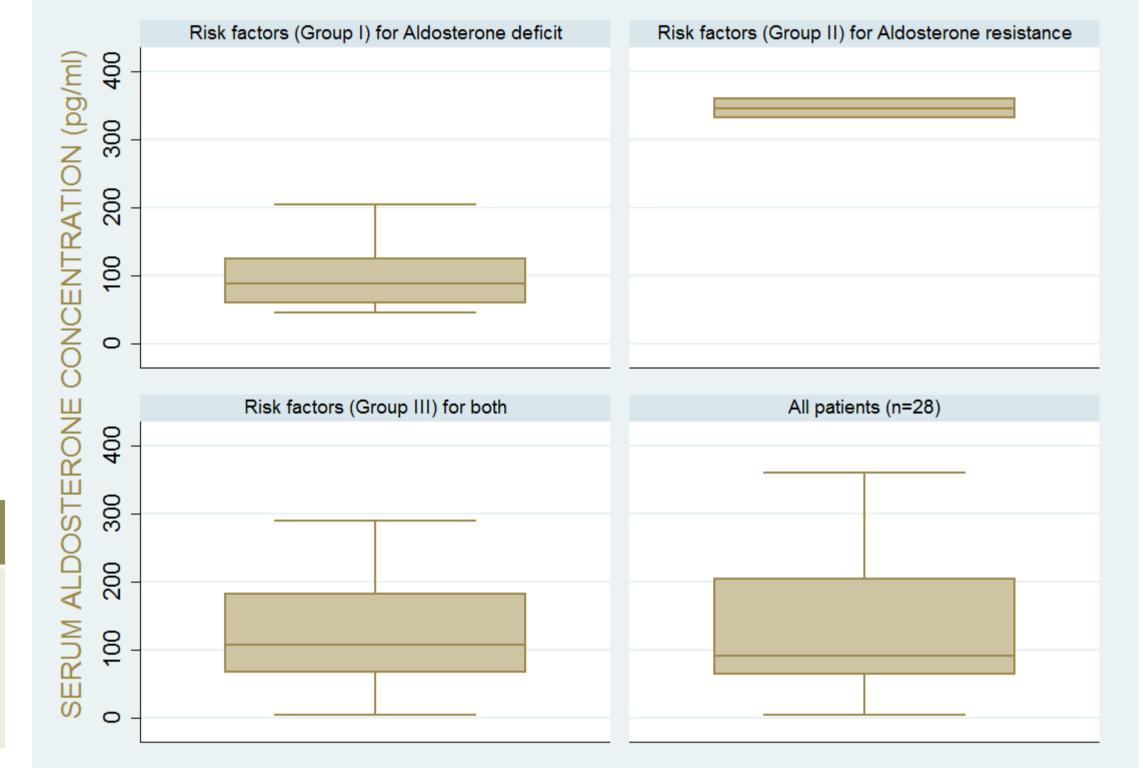




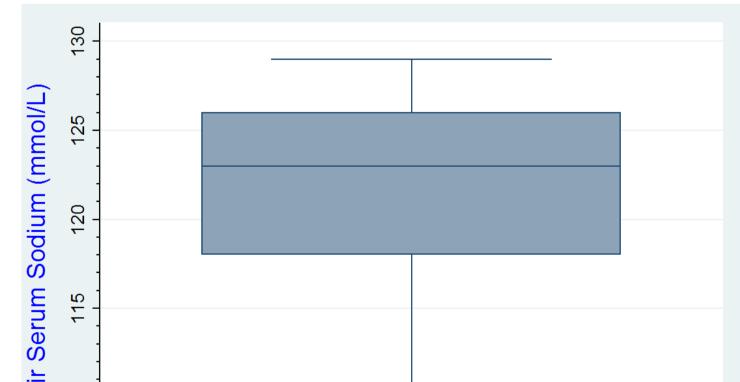
Table 2.Mean values at diagnosis (SD)

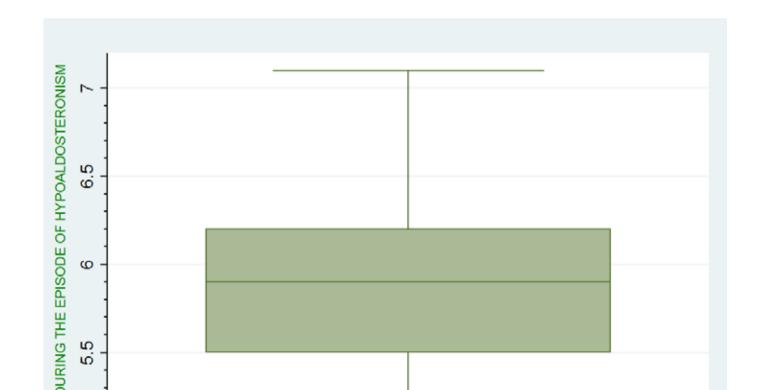
SNa	SK	UNa	POsm	UOsm	TTKG	SUrea	SCreatinine	Uricemia
							1.12 mg/dl	
(5.62)	(0.62)	(38.66)	(12.47)	mOsm/kg (167.75)	(0.85)	mg/dl (25.23)	(0.56)	(1.45)



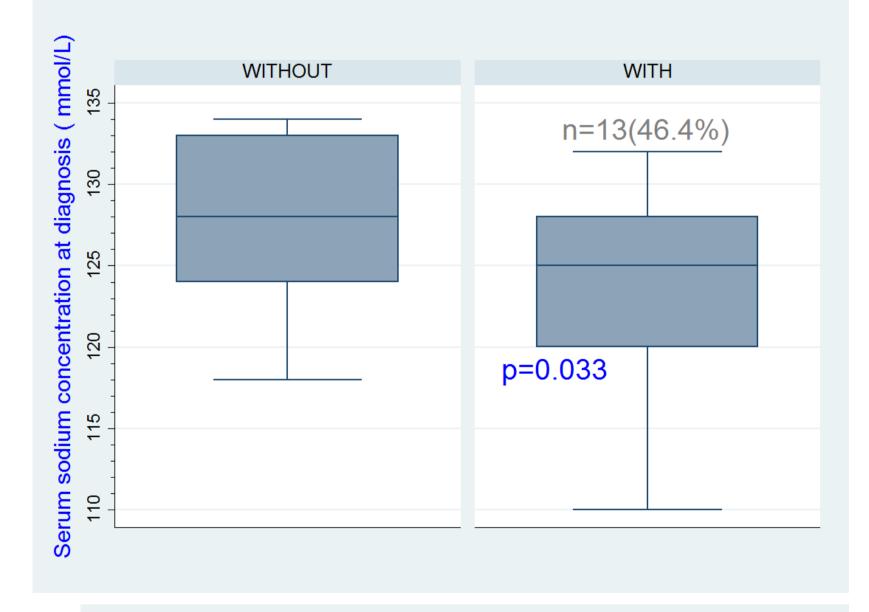
	Group I	Group II	Group III
Mean SNa	123.9 (3.18)	121.2 (2.83)	120.63 (6.12)
Mean SK	4.85 (0.62)	4.65 (0.49)	5.27 (0.62)

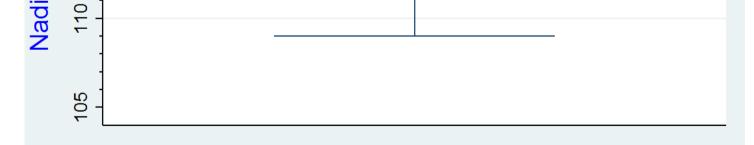
Graph 2. Nadir serum Sodium. Graph 3. Maximum serum Postassium.

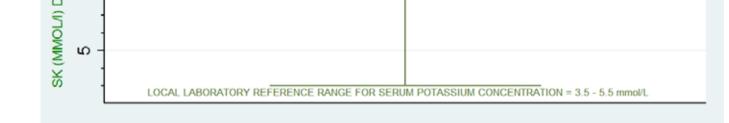




Graph 5. SNa with or without heparin and/or trimetoprim therapy.

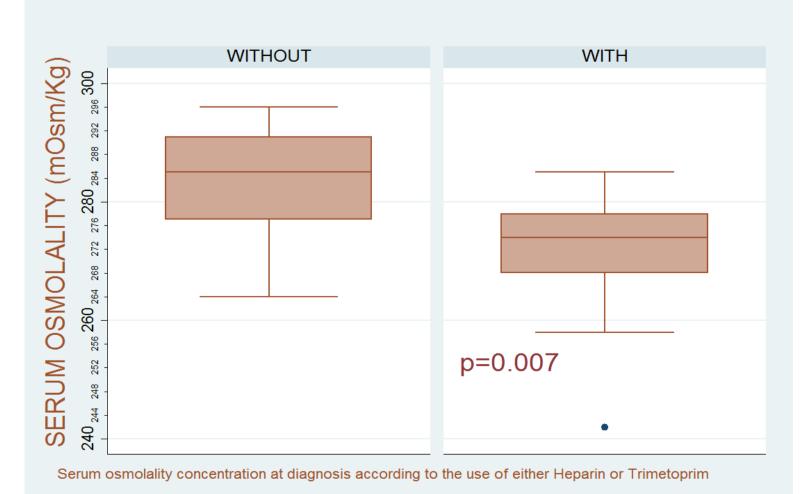






Patients with both high renin (>25 pg/ml) and low aldosterone (<100 pg/ml), all in Gr III, had significantly lower NSNa:113.33(4.04) than the rest: 123.19(4.2), p= 0.033.

Graph 6. SOsm with or without heparin and/or trimetoprim therapy.



CONCLUSIONS

Hypoaldosteronism can induce marked hyponatremia. Most patients had risk factors for both inhibition of aldosterone secretion and mineralocorticoid resistance. Heparin and/or trimetoprim use was associated with lower serum sodium and serum osmolality levels.

