Hyperaldosteronism

HOSP #		WARD	Murraysburg Hospital, Female Ward
CONSULTANT		DOB/AGE	51 y female

Abnormal Result

Aldosterone: 1380 pmol/L

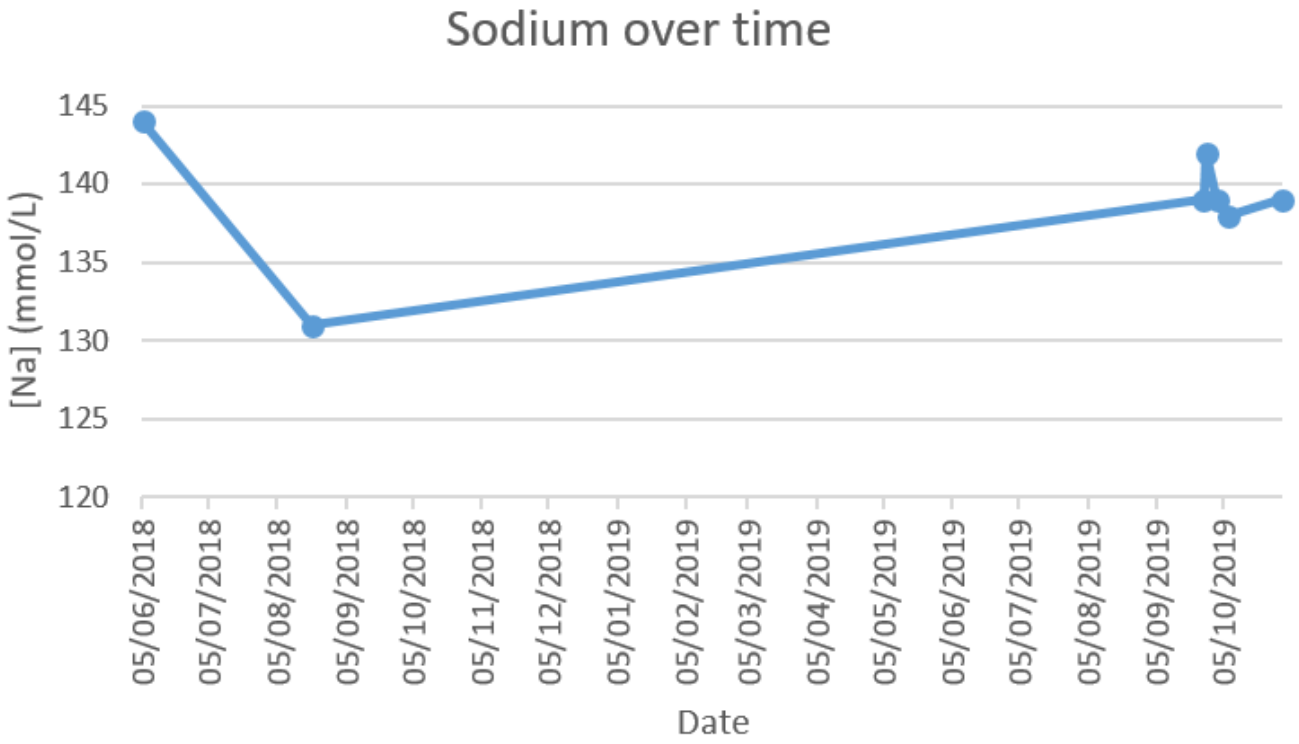
Renin: 2.1 ng/L

Aldosterone: Renin ratio: 657.14 pmol/ng

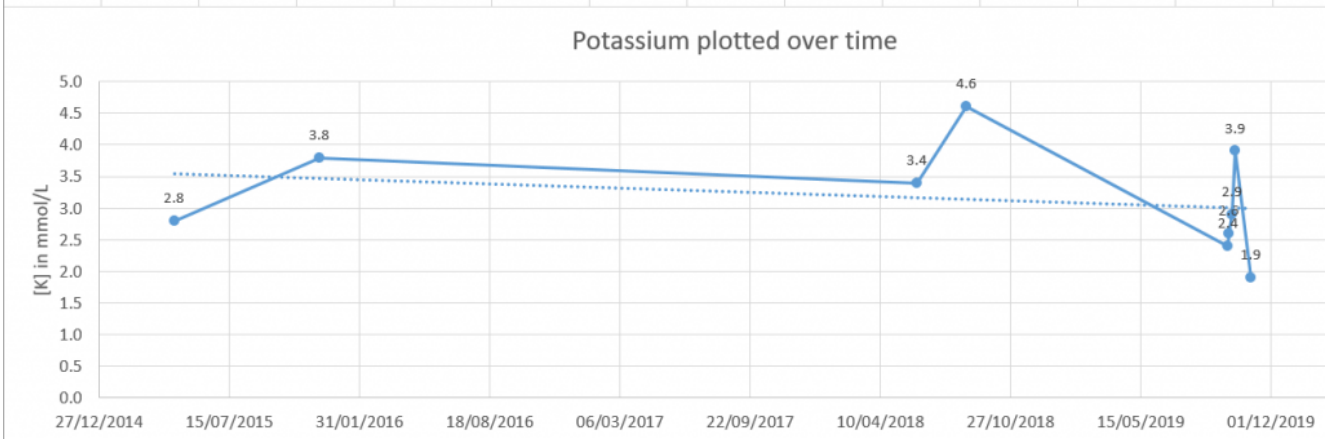
Presenting Complaint

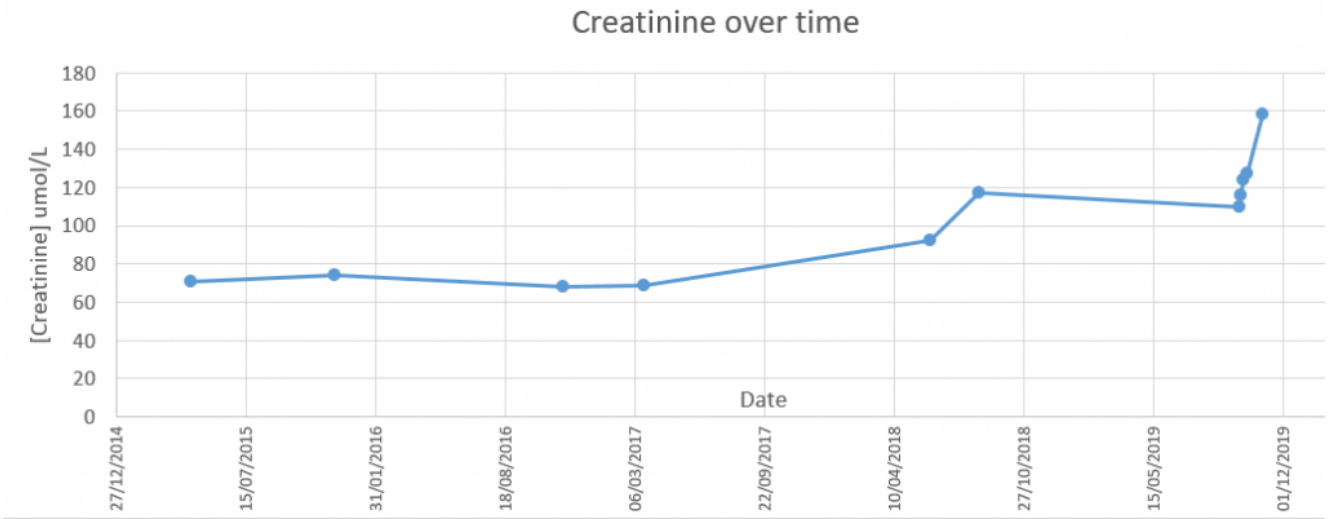
Uncontrolled Hypertension, unresolved on maximum dose of 3 antihypertensives.

History



	31/10/2019	07/10/2019	02/10/2019	27/09/2019	26/09/2019	20/08/2018	05/06/2018	30/11/2015	21/04/2015
K	1.9	3.9	2.9	2.6	2.4	4.6	3.4	3.8	2.8





Examination

Laboratory Investigations

Hos	Murraysburg Hospital wc MBH	☎ 049 844 0053	Received	07/10/2019	17:57
Wrd	Female Ward	☎	Registered	07/10/2019	17:58
Doc	DR HUMAN	☎		ePR	I Deta

Test Set	Staff Notes	Test Item	Result	Units	Normal Values	Previous Result 1
ALDOS	✓	Aldosterone	1,380.0	pmol/L		
		Patient condition				
		Aldosterone auto comm	ALDO4			
RENIN		Renin mIU		mIU/L		
		Renin ng	2.1	ng/L		
		Aldosterone : renin ratio	657.14	pmol/ng		

Other Investigations

Urine electrolytes

	01/10/2019 15:32
UNa	59
UK	27,5
Ucreat	4,1
Uprotein	0,27
Uprot:creat	0,066

Serum Results

Date	Sodium mmol/L	Potassium mmol/L	eGFR ml/min	GGT U/L	Chol mmol/L	TSH mIU/L	T4 pmol/L	FreeT3 pmol/L	Cort nmol/L
21/04/2015		2,8	>60		5,07				
30/11/2015		3,8	>60		4,53				
15/11/2016			>60		4,04				
20/03/2017			>60		4,36				
05/06/2018	144	3,4	56		4,39	1,79	11,9	5	394
20/08/2018	131	4,6	42						
21/08/2018									
24/08/2018									
26/08/2018									
26/08/2018									
26/09/2019	139	2,4	45			0.81			
27/09/2019	142	2,6	43						
01/10/2019									
02/10/2019	139	2,9	40			CEGK			
03/10/2019									
07/10/2019	138	3,9	38						
31/10/2019	139	1,9	30	28					

Urine metanephrines

Urine collection period	24 h	Reference value
Urine volume	3080 ml	
Ucreat	2,2 mmol/L	
Umetadren	160 nmol/L	

Unormetadren	870 nmol/L	
dUmetadren	493 nmol/24h	152-913
dUnormetadren	2680 nmol/24h	699-2643
Umetadren:cr	73 nmol/mmol creat	17-91
Unormetad:cr	395 nmol/mmol creat	75-309

Final Diagnosis

Primary hyperaldosteronism causing secondary hypertension with accompanying renal injury.

Take Home Messages

Reference Ranges for Aldosterone:

- Upright 70 – 1066 pmol/L
- Supine 49 – 643 pmol/L

Screening for primary hyperaldosteronism: most sensitive when **>350** pmol/L

Reference Ranges for Renin:

- Upright: 2.7 – 27.7 ng/L
- Supine: 1.7 – 23.9 ng/L

Beta-blockers suppress renin levels and should be stopped 2 weeks before testing.

Aldosterone: Renin Ratio:

Most sensitive when the ratio is **>118** pmol/ng.

Effects of hyperaldosteronism

- One’s expectation is a high serum sodium, but since it normalizes with an increase in fluid volume, hence

hypertension as in this case, there is normal sodium.

- Low serum potassium due to loss in urine, although this can also be normal.
- Increased urine potassium concentration (>30 mmol/L) in a random urine specimen suggests increased mineralocorticoid effect.
- The renin:aldosterone ratio is used to compensate for the increase in aldosterone which is caused by an increase in renin (for instance which is caused by hypovolemia or low blood pressure).
- Some studies recently published are suggesting that the prevalence of hyperaldosteronism are significantly more than was (and is) thought, and hence urinary (24 hour) aldosterone measurement may be more accurate to screen for hyperaldosteronism. The authors of recent estimates of the prevalence of hyperaldosteronism are of opinion that hyperaldosteronism may be the cause of around 10% of unexplained “essential” hypertensives (see attached articles).

Hyperaldo-prevalence-2020Download
Primary-hyperaldo-Editorial-2020Download