

# Is Demeclocycline safe and effective in the treatment of SIADH?

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## Background

The syndrome of inappropriate anti-diuretic hormone secretion (SIADH) is the most common cause of euvolemic hyponatraemia in hospitalised patients. Demeclocycline is a well known treatment for SIADH apart from fluid restriction and the newer vasopressin receptor antagonists. We studied the use of Demeclocycline for treatment of SIADH in our hospital to assess its efficacy and safety.

## Materials and Methods

A search was performed for all discharge summaries containing Demeclocycline for a period of 12 months (Aug 2012 to Sep 2013). Case notes reviewed and further data collected on the use of Demeclocycline, the dosage, serum Na levels and its effectiveness and side-effects.

40 results were obtained of which 5 were excluded as Demeclocycline was mentioned but not actually used. 35 admission episodes involving 27 unique patients were identified. 18 episodes were excluded as they were on Demeclocycline prior to admission. Data analysed for 17 patients where Demeclocycline was started in the current admission. Prescription data was not available for 2 patients and in 1 patient, the use was transient (<5 days). 14 patients commenced on Demeclocycline as inpatient for a minimum of 5 days.

## Results

The results showed that the mean rise in Sodium level at day 5 was > 3.1 mmol/L (data from 7 patients) and the peak rise in Sodium was at day 7 of > 6 mmol/L (data from 5 patients). 2 patients failed to show any significant response despite prolonged demeclocycline (>14 days) (figure 1). 3 patients had to discontinue demeclocycline due to significant renal impairment (table 1).

Dosing data (from 28 admission episodes)

- 3 episodes on 300mg daily (300 od)
- 16 episodes on 600mg daily (150 qds / 300 bd)
- 3 episodes on 900mg daily (300 tds)
- 6 episodes on 1200mg daily (300 qds)

figure 2: Serum Na profile first 3 days

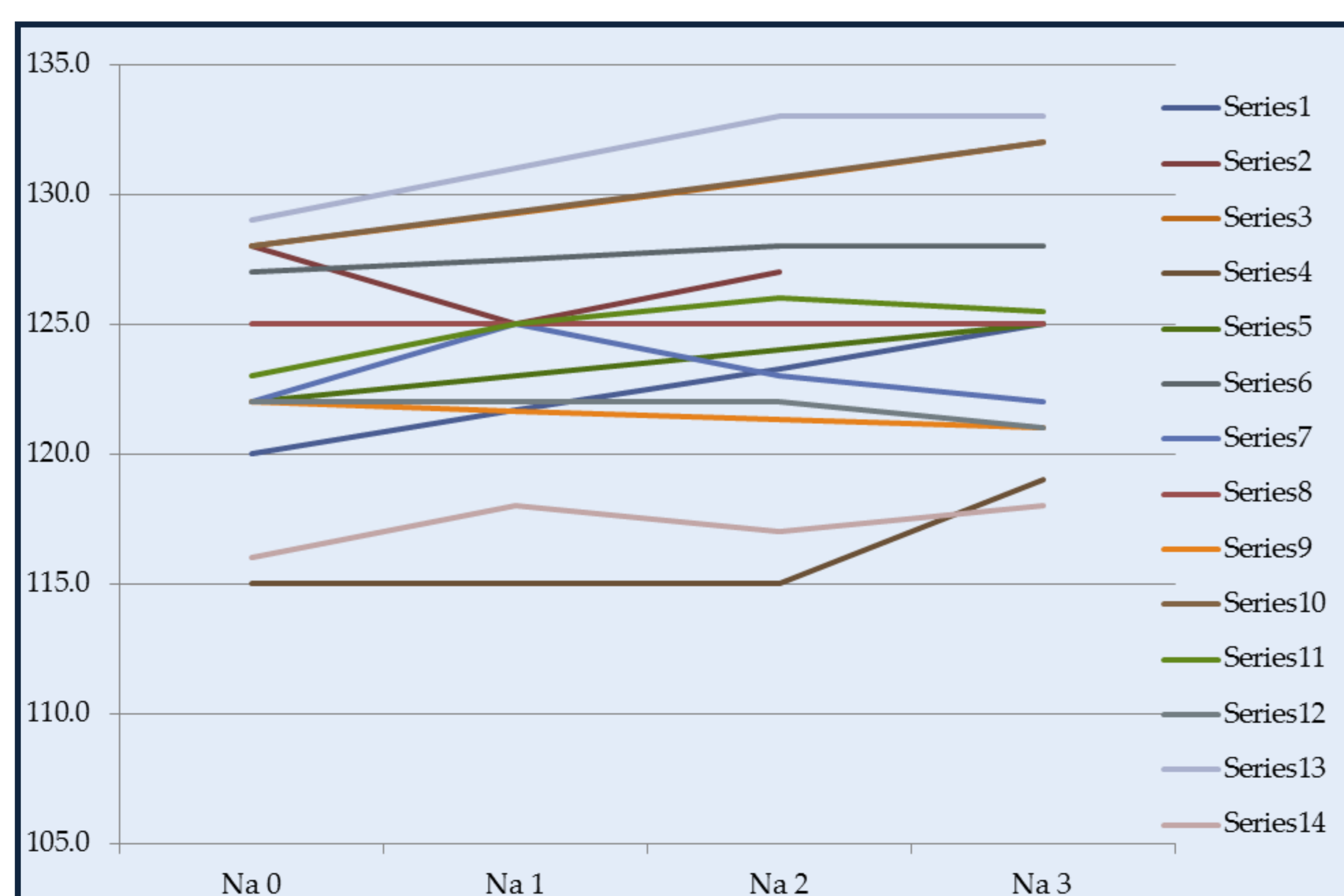


figure 1: Serum Na profile on Demeclocycline therapy

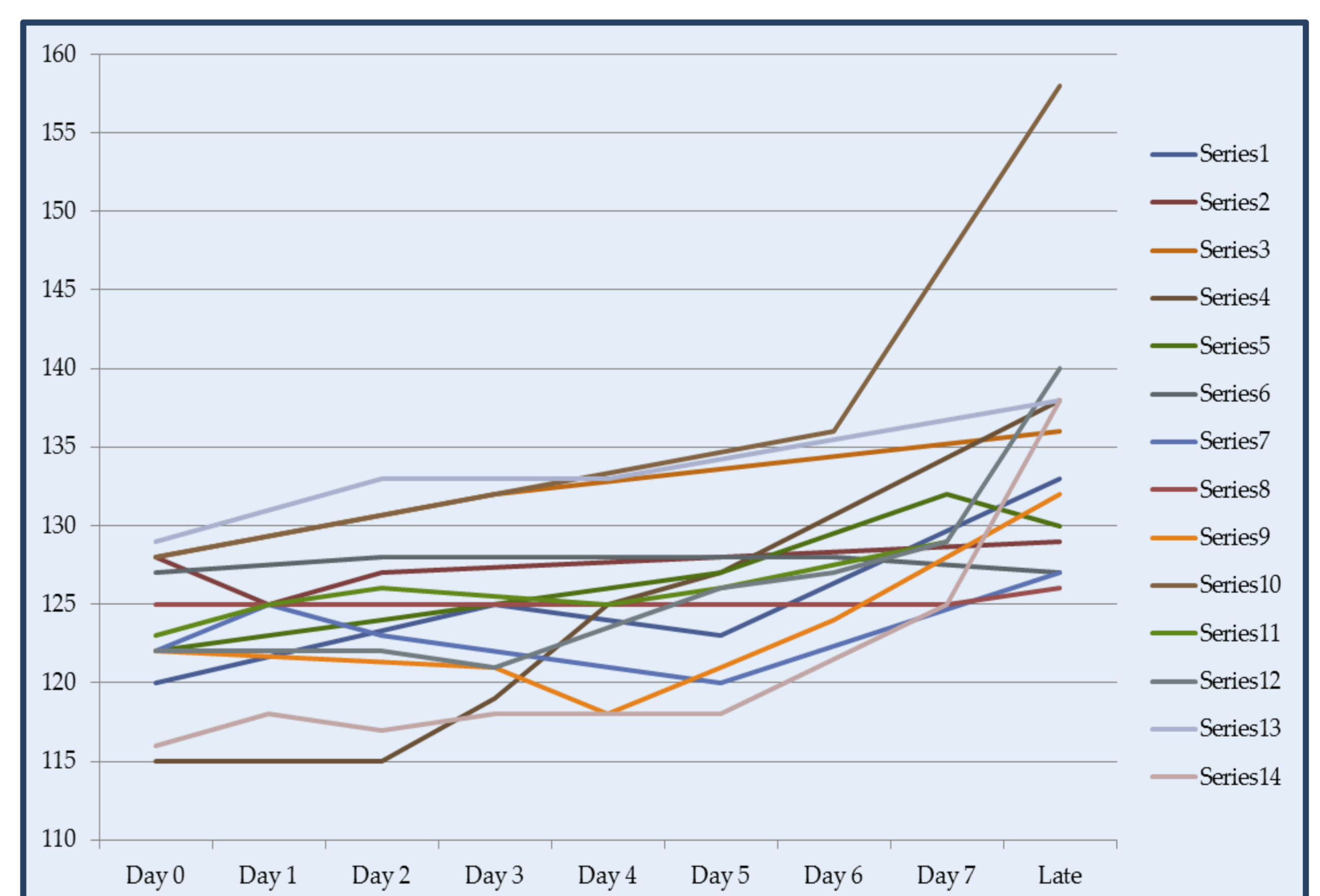


table 1: Demeclocycline and renal impairment

	eGFR pre	eGFR post	Urea pre	Urea post	Na pre	Na post	Days on Rx
Patient 1	51	17	6.4	27.5	128	158	32
Patient 2	68	39	5.3	17.9	122	140	11
Patient 3	90	37	6	16.2	116	138	13

## Conclusions

Demeclocycline, though effective in the management of SIADH has a variable effect on Sodium level. No significant change is observed in the first 72 hours. In patients who respond, significant rise in Na is usually seen in 5-7 days. It is safe to initiate in an outpatient setting but serum Na should be monitored at 1,2 and 4 weeks following initiation. It should be discontinued if significant renal impairment and/or hyponatremia develops.