Don't panic!
How acute kidney injury and hyponatraemia can be safely managed on a Frailty Virtual Ward

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Introduction

The Frailty Virtual Ward (FVW) at Gloucestershire Hospitals NHS Foundation Trust (GHNHSFT) provides ward-level treatment in the community for acutely unwell/decompensated older people living with frailty. Twice daily MDTs direct care from community partners, including twice daily vital signs, bloods, weights, intravenous (IV) therapies and face-to-face reviews. Patients receive regular clinician contact via telephone.

AKI and hyponatraemia are common in the older, frail population, driven by ageing physiology, polypharmacy and multimorbidity. AKI is usually pre-renal (70%) (i.e. dehydration, drugs, acute tubular necrosis), or post-renal (25%) (i.e. obstruction)[1]. Treatment may include catheterisation, holding drugs, IV hydration. Hyponatraemia in this population is usually chronic, and drug-induced. These patients are often at greater risk from overly aggressive correction of hyponatraemia, than from the hyponatraemia itself [2]. With the increased availability of remote monitoring and community-based care, we may be able to provide safe care for these types of patients in their own homes, whilst minimising their risk of healthcare associated adverse events.

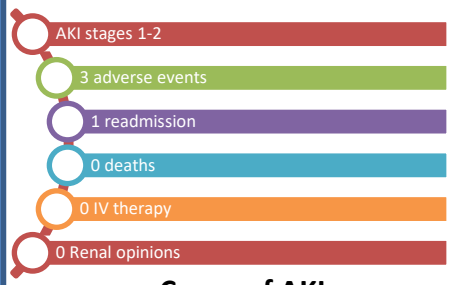
Objective

To demonstrate that frail, older patients with AKI or hyponatraemia can be safely managed on a Frailty Virtual Ward., compared with traditional inpatient care.

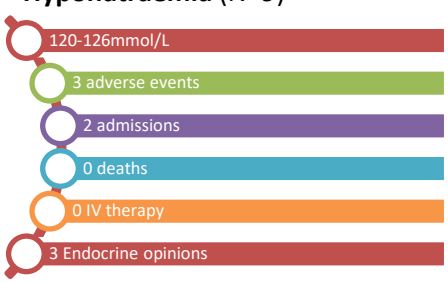
Results

21 patients with AKI or hyponatraemia (sodium ≤126mmol/L) were managed on the FVW over 8 months. Their mean age was 86 and frailty score 5. Most AKI cases were stage 1. The lowest sodium managed was 120mmol/L. Six suffered from adverse clinical events including sepsis, delirium, drug reaction, deconditioning, and chest pain, but only two patients required admission related to these. Three hyponatraemic patients received remote Endocrine opinions.

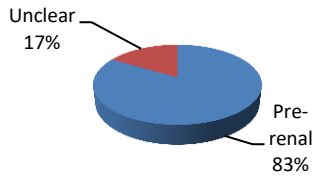
AKI (n=12)



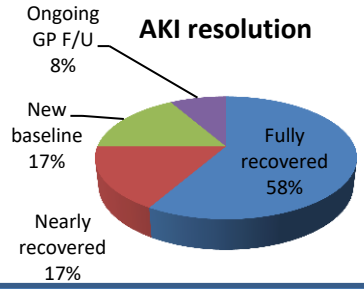
Hyponatraemia (N=9)



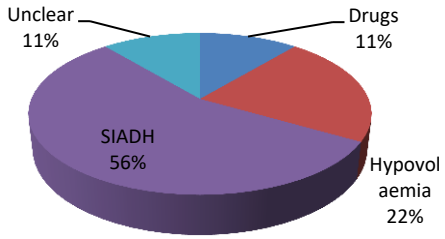
Cause of AKI



AKI resolution



Causes of hyponatraemia



One patient developed worsening hyponatraemia and was admitted to hospital. All others improved and were discharged to GP.

Comparable patients (age/frailty score/department) with AKI/hyponatraemia managed as inpatients were usually more unwell, with more severe disease. They suffered more adverse clinical events, including death. A minority were eligible for treatment on the FVW. Inpatients were slightly more likely to undergo relevant hyponatraemia investigations.

Methods

1. Produce evidence-based guidance for inclusion/exclusion criteria and managing AKI/hyponatraemia on the FVW
2. Recruit patients with AKI/hyponatraemia onto the FVW over 8 months
3. Collect clinical data from FVW cohort and comparable inpatient cohort

Inclusion criteria	Exclusion criteria
Patients >65 years of age	Haemodynamically unstable
Clinical Frailty Score ≥5	Otherwise requiring acute hospital admission (e.g. sepsis)
Physiologically stable (NEWS<4)	Anuric/oliguric
Who would otherwise be admitted to hospital	Challenging fluid management
AKI 1-3	Unclear cause of presentation
Not suitable for renal replacement therapy	Symptomatic uraemia
Na 120-134	K ≥5.5
Hyponatraemia onset >48 hours	Anuric/oliguric
Asymptomatic/mild symptoms	pH <7.3
	Hepatorenal/cardiorenal syndrome
	Renal transplant
	Acute hyponatraemia (<48 hrs)
	Seizures, significant confusion, headache, drowsiness, encephalopathy
	Unable to drink
	High risk for complication e.g. alcohol excess, epileptic, heart failure, brain tumour/raised intracranial pressure

Conclusion

Mild AKI and moderately severe chronic/asymptomatic hyponatraemia can be managed under the Frailty Virtual Ward model with few adverse events compared with inpatient care. Underlying causes often require minimal medical intervention, such as medication review or fluid restriction. Timely specialist input is still possible. Work is needed to ensure FVW patients receive the same level of investigation as inpatients, and have a clear follow-up plan.

References

1. Hanif MO, Bali A, Ramphul K. Acute renal tubular necrosis. InStatPearls [Internet] 2023 Jul 4. StatPearls Publishing.
2. Sterns R. Overview of the treatment of hyponatremia in adults. In: UpToDate, Post TW (ed), Wolters Kluwer. https://www.uptodate.com (Accessed 16th November 2023).