

# Personalized health care: Home POCT sodium measurement in central diabetes insipidus in a patient with impaired thirst perception

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No potential conflicts of interest.

## Background

Central diabetes insipidus (CDI) is caused by deficiency of antidiuretic hormone (ADH). Patients with CDI are at risk for fluid balance disturbances, especially when there is impaired thirst perception or inability to access water freely.

Blood sodium measurement gives a good reflection of the actual fluid balance but is generally not available in the home situation. For patients in which CDI is difficult to manage sodium measurement at home may be a good instrument for more self-reliance and possibly less emergency room visits and/or hospital admissions due to dysregulation of fluid balance

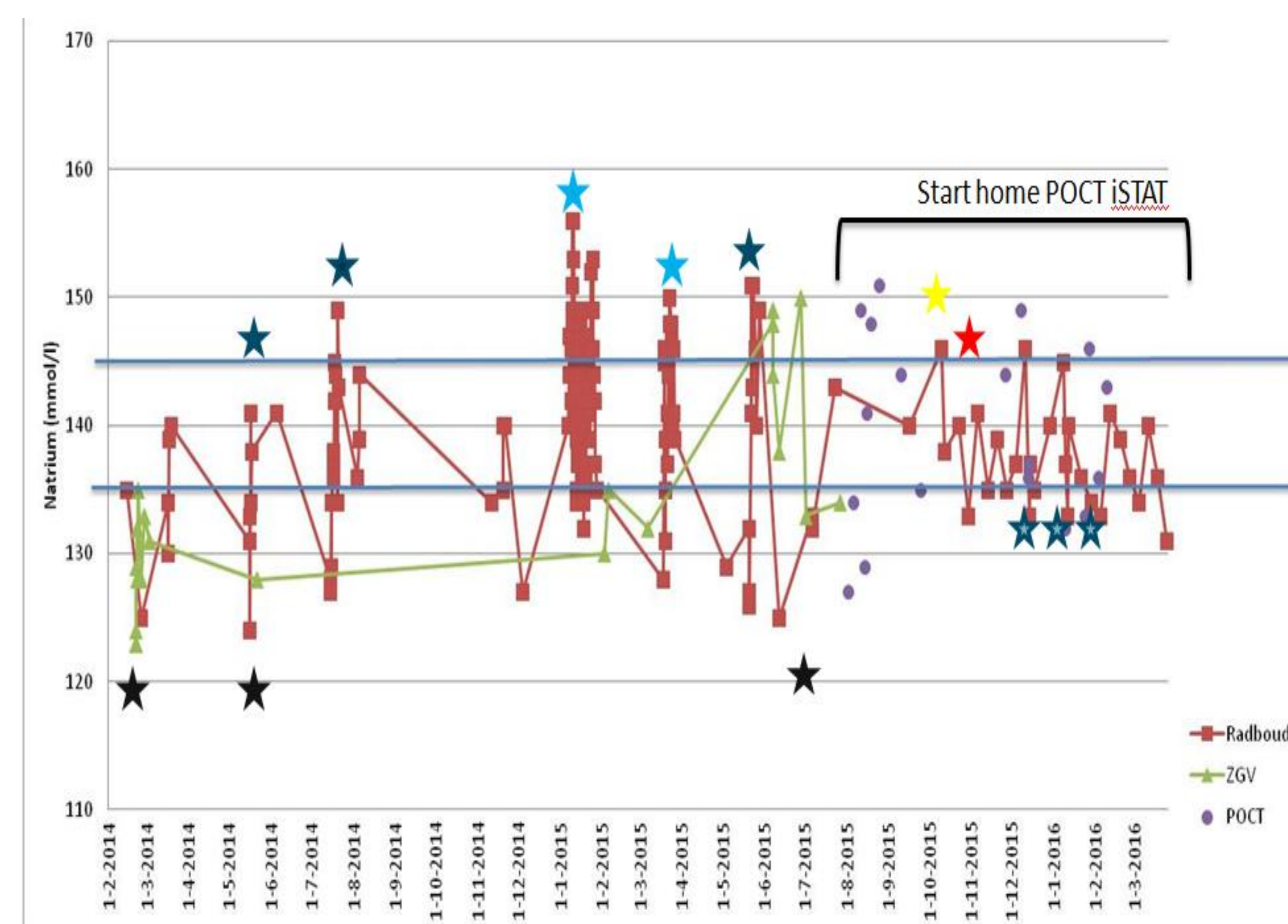
**Aim:** we describe a case of a boy with CDI and impaired thirst perception in whom the use of blood sodium, measured by the use of an i-STAT analyzer, has successfully led to more self-reliance and quality of life for him and his family

## Case description

We describe a 5-year old boy with an optical pathway glioma with a complicated course of disease. As a consequence of his treatment he has psychomotor retardation, blindness and developed anterior hypopituitarism and CDI. He has an impaired thirst perception and is behaviorally focused on drinking. He was frequently admitted to the hospital because of dysregulation of his CDI as it was not possible to adequately adapt DDAVP dosage to his drinking behavior in the home situation. We found the i-STAT POCT analyzer (Abbott) to be a reliable system for sodium measurement at home. Expenses were covered by the health insurance company for a trial period (respectively 2 and 3 months).

During the trial period there was no need for extra ER visits in contrast to the period before home measurement. Also there haven been no clinical admissions due to dysregulation of fluid balance and consequently more comfort of the patient and his parents.

## Results sodium monitoring



- ★ Emergency department visits
- ★ Admission Radboudumc (malaise)
- ★ Admission Radboudumc (debulking tumor)
- ★ Start chemotherapy
- ★ Admission Radboudumc (malaise complaints)
- ★ Admission Radboudumc (sodium 151)  
Temporarily no POCT i-STAT analyzer at home
- Sodium measurements Radboudumc
- ▲ Sodium measurements ER
- i-STAT POCT sodium measurements



## Conclusion

i-STAT sodium home measurement is an excellent example of personalized health care leading to more self-reliance and improvement of quality of life.



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