

Evidence Series: Study

Remote Patient Monitoring Program in Automated Peritoneal Dialysis: Impact on Hospitalizations

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BACKGROUND

- Automated peritoneal dialysis (APD) is a growing PD modality but as with other home dialysis methods, the lack of monitoring of patients' adherence to prescriptions is a limitation with potential negative impact on clinical outcome parameters.
- Remote patient monitoring (RPM) allowing the clinical team to have access to dialysis data and adjust the treatment may overcome this limitation.



OBJECTIVES

To determine clinical outcomes associated with RPM use in incident patients on APD therapy.



ENDPOINTS

Number of hospitalizations per patient-year and hospital days



METHODS

- A retrospective cohort study
- An RPM program was used and the patients were divided into **two cohorts**:

1. APD RPM COHORT:
patients using the Homechoice Claria
device with Sharesource technology =
65 (18%)

2. APD WITHOUT-RPM COHORT:
patients using
Homechoice
without RPM = **295**
(82%)

- Hospitalizations and hospital days were recorded over 1 year
- Propensity score matching 1:1, to ensure there is less potential for selection bias, the actual cohorts evaluated were 63 in the RPM Cohort and 63 in the APD without-RPM Cohort
- Claria with Sharesource was used in this study which is similar in function and design to Amia with Sharesource

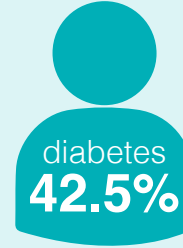
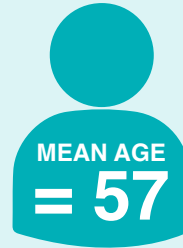
**ACTUAL COHORTS EVALUATED
WERE 63 IN THE RPM COHORT**



63 IN THE APD WITHOUT-RPM

STUDY POPULATION

- **360 patients** initiating APD between **1 October 2016 and 30 June 2017** in 28 Baxter Renal Care Services (BRCS) units in Colombia.
- Mean age = 57 years (diabetes 42.5%)



RESULTS

- After propensity score matching, APD therapy with RPM (n = 63) compared with APD-without RPM (n = 63) was associated with significant reductions in hospitalization rate:



↓ 6.57
fewer hospitalization days
(per patient-year)

**REDUCTION OF
HOSPITALIZATION DAYS
by 54%**

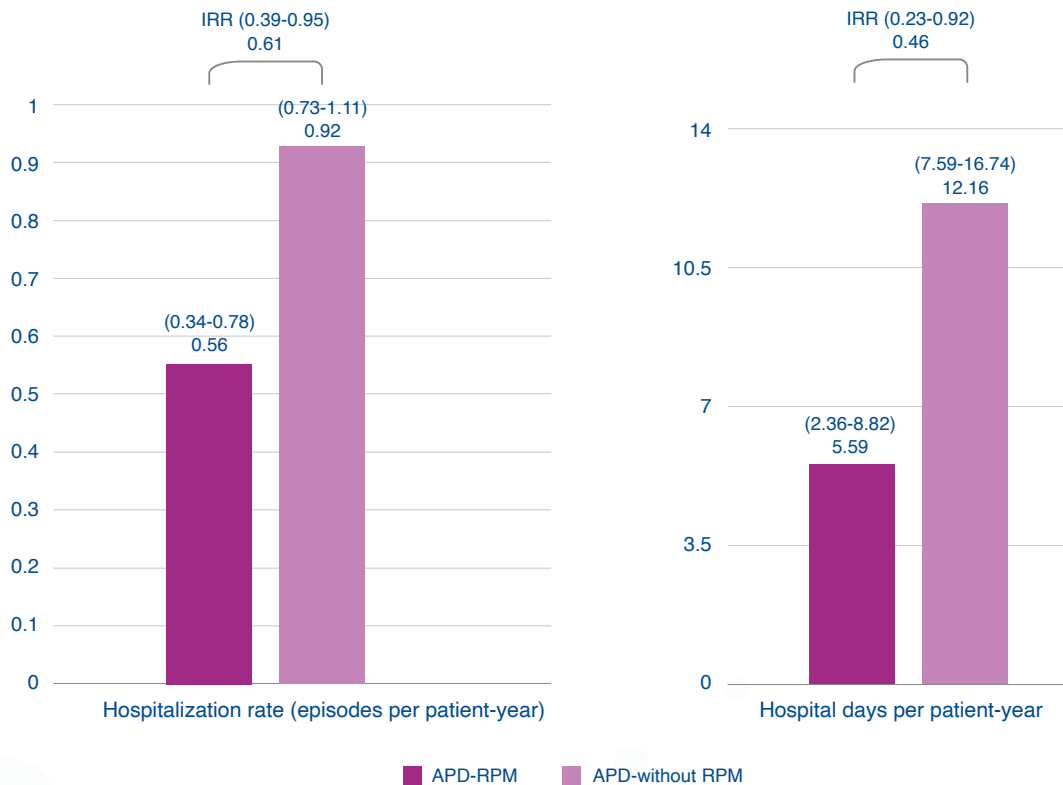
↓ 0.36
fewer hospitalizations
(per patient-year)

**REDUCTION OF
HOSPITALIZATION RATE
by 39%**



RESULTS

Clinical Outcomes Associated with RPM Matched Sample Based on Negative Binomial Regression



CONCLUSIONS

- The use of RPM in APD patients was associated with lower hospitalization rates and fewer hospitalization days supporting the value RPM as an effective tool to improve clinical outcomes of APD therapy.

1. Due to the observational retrospective study design, no conclusions can be made regarding causality. Different analytical approaches were applied showing consistency in the direction of the observed associations, however, a randomized clinical trial would be required to confirm the effects of a RPM program. 2. The number of patients in the RPM group was low, reflecting the recent introduction of RPM technology. 3. The study included incident patients and may not reflect hospitalization outcomes in prevalent patients with long dialysis vintage time. 4. The authors did not register outcomes from the patient's perspective (e.g.: measures of quality of life or satisfaction with care), or additional variables (e.g.: time from PD catheter insertion to initiation of PD and/or history of predialysis care). These factors should be considered in future analysis. 5. The retrospective study design hinders a meaningful assessment of the temporal relationship between the RPM intervention and hospitalization.

Baxter's **Homechoice Claria** APD system is intended for automatic control of dialysis solution exchanges in the treatment of pediatric and adult renal failure patients undergoing peritoneal dialysis in the HOME HEALTHCARE ENVIRONMENT including comparable use in professional healthcare facilities.

The **Amia** Automated PD System is intended for automatic control of dialysate solution exchanges in the treatment of adult renal failure patients undergoing peritoneal dialysis. All therapies using the **Amia** Automated PD System must be prescribed and performed under the responsibility of a physician who is familiar and well-informed about peritoneal dialysis.

The **Sharesource** portal is intended for use by healthcare professionals to remotely communicate new or modified treatment parameters with compatible dialysis instruments and transfer completed treatment data to a central database to aid in the review, analysis, and evaluation of patients' historical treatment results. This system is not intended to be a substitute for good clinical management practices, nor does its operation create decisions or treatment pathways.

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