Background

Fluid overload is a recognized problem in dialysis population, it's associated with many serious health complications including hypertension, cardiovascular events, and respiratory complications. Moreover fluid overload is significantly associated with mortality in dialysis patients.

Among 400 hemodialysis patients in Fahad Bin Jassim kidney center in Qatar, patient’s lack of knowledge-related-fluid overload problem was observed as a major issue. 23% of total hemodialysis patients in our center were presented with interdialytic weight gain (IDWG) of 3 Kg and more. (The standards of interdialytic weight gain is 1.5 to maximum 2 kg). 10% of them had frequent visits to emergency room for emergent ultrafiltration session.

We believe as many do in the field of dialysis that dialysis patients are the core factor in fluid management of their own with the guidance and support by the dialysis team.

FBJ dialysis clinical care & dialysis quality teams developed a fluid control educational program for hemodialysis patients.

Project Aim

For the target HD population with IDWG of 3kg or more:
- To achieve an IDWG of 1.5-2 Kg over a period of 5 months.
- To reduce ER visits for emergent UF treatment.

Strategy for change

IHI improvement methodology (PDSA) is used for management IDWG

- Identify patients with interdialytic weight gain ≥ 3 kg.
- Decrease the interdialytic weight gain in patients gaining ≥ 3 kg and more between dialysis sessions to 1.5 to 2 kg.
- Baseline Patient’s data was collected including (demographic, socio-economic status, dialysis related/interdialytic weight gain, comorbidities, blood pressure measures and antihypertensive medications).
- A condensed educational program developed.
- Continuous monitoring and tracking of the patients weight gain and compliance.

Changes Made

- An individualized fluid control care plan was set and discussed with the patient and their family.
- Fluid control educational program was initiated from Jan 2017 to May 2017 (5 months period) including one on one educational bedside session and distribution of related educational materials.
- The patient’s clinical response and care plan adherence were monitored every session by the assigned team.

Outcome

- A total number of 93 hemodialysis patients (23% of FBJ center) were found to have an interdialytic weight gain of 3 kg and more, 10 % of them visited the emergency room frequently (2-4 times per months) for extra ultra-filtration sessions and 3% were scheduled for extra weekly UF session within their dialysis unit.

Cont. Outcome

- 77% of the patients were Qatari national, 60% female and 57% of the patients aged between 30 and 65.
- Majority of the patients (91%) were hypertensive and the predialysis mean BP was (143/73mmhg) with systolic range (185 to 100), diastolic range (100 to 55). The post dialysis BP mean was 130/70mmhg with systolic range (175 to 100) and diastolic from (95 to 50).
- 47% were diabetic and 26% were with heart diseases, 7% with ejection fraction of (25% -35%).
- 43% of the target patients were able to achieve IDWG of 1.5-2 Kg (IDWG went down gradually by 2 to 3 kg ) and 42% reached weight of 2.1 to 3.5 decreasing by 1.5 to 3 kg.
- There was no significant changes in pre or post dialysis sessions blood pressure but the intradialytic hypertension episodes decreased from average of 17 episodes per month to (2-6) episodes.
- The monthly ER visits by FBJ HD patients with fluid overload was remarkably decreased from 20 visits to 2 visits per month.

Percentage of patients reached target IDWG of 1.5 to 2 kg over the studied period.

![Graph showing percentage of patients reached target IDWG over the studied period.](image)

The interdialytic hypotension episodes over the studied period.

![Graph showing interdialytic hypotension episodes over the studied period.](image)

Hemodialysis Patients monthly visits to ER due to fluid overload over the studied period.

![Graph showing hemodialysis patients monthly visits to ER.](image)

Conclusion

Patient-centered care approach in fluid management for hemodialysis units have a great impact in controlling fluid overload and some of its consequences.

Next steps

- To extend the newly developed fluid control care approach to involve all HD patients in Hamad Medical Corporation (HMC) dialysis facilities.
- To study the impact of this care approach in the incidence of Cardiovascular events in HD patients.