



MANITOBA RENAL PROGRAM

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| SUBJECT Calcium chloride additive for Hemodialysis Patients | SECTION | 30.10 Hemodialysis Equipment and Procedures |
| | CODE | 30.10.15 |
| AUTHORIZATION <ul style="list-style-type: none"> ▪ Professional Advisory Committee, Manitoba Renal Program • Nursing Practice Council, St. Boniface Hospital | EFFECTIVE DATE | September 2015 |
| | REVISION DATE | May 2016 |

PURPOSE:

1. Calcium chloride may be added to the acid concentrate to control and/or treat hypocalcemia in chronic (2-3x/week) hemodialysis patients who have recently undergone a parathyroidectomy or are hypocalcemia due to some other cause.
2. Calcium chloride additive is also used in patients who receive nocturnal hemodialysis in order to maintain a high normal serum calcium concentration and prevent development of hyperparathyroidism.

POLICY:

1. Registered Nurses and Licensed Practical Nurse in hemodialysis may add the calcium chloride powder to the acid concentrate upon a physician's order.
2. Home hemodialysis (nocturnal or 3x/week) patients will receive direction on the procedure by a Home Hemodialysis Nurse. The patient must demonstrate an understanding of the procedure, and have documentation included on the patient chart confirming successful certification in this procedure.

GUIDELINES FOR HOME HEMODIALYSIS and POST PARATHYROIDECTOMY PATIENTS:

1. All new patients receiving nocturnal hemodialysis should be prescribed a 1.5 mmol/L calcium bath as the standard bath.
2. Target corrected calcium concentrations:
 - a. Pre-dialysis corrected calcium concentrations should be maintained between 2.1 – 2.7 mmol/L (upper limit of normal serum calcium).
 - b. Post-dialysis corrected calcium concentrations should be maintained between 2.1-2.8 mmol/L (mildly hypercalcemic).
 - c. If corrected calcium concentrations drop below the targets po Calcitriol and Calcium will be ordered.
 - d. Calcium chloride additives to acid concentrate should be considered if po Calcitriol and Calcium have been maximized.
 - e. Repeat pre and post hemodialysis calcium/albumin levels 1 week following po Calcium/Calcitriol dosing changes or initiation of Calcium Chloride additive.

GUIDELINES FOR HOME HEMODIALYSIS and POST PARATHYROIDECTOMY PATIENTS:

3. Recommended initial dose of Calcium Chloride additive is 1 vial added to 5L dialysate acid concentrate jug (raises dialysate calcium concentration by 0.25 mmol/L).
4. Repeat pre- and post-dialysis calcium and albumin concentrations 1 week following the liberalization of dietary calcium intake or initiation of calcium chloride supplementation. Bloodwork may be ordered sooner if there are any concerns regarding hypercalcemia.
5. If repeat corrected calcium within target range, continue with same amount of additive to every dialysis treatment.
6. If repeat correct calcium below target range, increase dose of Calcium Chloride additive by 1 vial in each 5L acid concentrate jug (0.25 mmol/L) and repeat pre- and post-dialysis calcium and albumin 1 week later.

EQUIPMENT:

- Calcium chloride powder 8.27 g/vial [Chief Medical Supplies].
- Acid concentrate jug – 5L
- Medication label

KEY POINTS:

- Brand Name: Calcium Chloride Additive
- Each vial of calcium chloride 8.27 g added to 5L of acid concentrate will increase the final calcium (Ca) concentration by 0.25 mmol/L (e.g. patient currently on 1.5 mmol/L Ca bath + 0.25 mmol/L added = final Ca concentration 1.75 mmol/L).

PROCEDURE:

1. Open acid concentrate jug as prescribed for patient.
2. Open calcium chloride container(s) and add prescribed dose to the acid concentrate jug.
3. Replace cap and mix thoroughly to ensure that powder has dissolved.
4. Apply medication sticker to acid concentrate jug.
5. Proceed with machine set up.
6. Arrange bloodwork for serum calcium and albumin q weekly x 3 then prn as directed by physician.

KEY POINTS:

- Hypocalcemia patients should be receiving a Ca 1.5 mmol/L bath.
- Serum calcium concentrations may change rapidly with the addition of the Calcium Chloride additive.
- Bloodwork for calcium and albumin may be ordered sooner than 1 week if physician concerned that patient could develop hypercalcemia.

GUIDELINE DEVELOPERS:

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- James Zacharias, MD, Nephrologist, Manitoba Renal Program
- Judy Olson, RN, Home Dialysis Nurse, Manitoba Renal Program
- Lori Wazny, Pharm.D., Clinical Pharmacist, Manitoba Renal Program

DOCUMENTATION:

- Dialysis Chart
- Medication Administration Record prn
- eKHR/medication flow sheet
- Ward Chart: Integrated Progress Notes if applicable

REFERENCES:

Chief Medical Supplies: Calcium Chloride for Haemodialysis, CACL-0827: Information for Patient Use

[Calcium Chloride for Haemodialysis Information for Use_CACL827 \(2\).pdf](#)