

Be Prepared: Palliative Care Emergencies in the Home Balance (Hypercalcemia)

Presenters:

Dr. Jennifer Shapiro MD CCFP (PC), Temmy Latner Centre for Palliative Care

Dr. Aamir Haq MD CCFP (PC), Lakefront Clinic, Dorothy Ley Hospice

Host and Moderator: Jennifer Campagnolo, CHCA

Date: June 8, 2022



Land Acknowledgement



We recognize with humility and gratitude that Canada is located in the traditional, historical and ceded and unceded Lands of First Nation, Inuit and Metis Peoples. On behalf of us all, we acknowledge and pay respect to the Indigenous peoples past, present and future who continue to work, educate and contribute to the strength of this country.

Learning Objectives

By the end of the session, participants will be able to:

Provide an overview of hypercalcemia (causes, clinical picture/symptoms and assessments) in the context of home-based palliative care

Explore approaches to identifying goals of care and managing hypercalcemia in the home

Preparing and engaging the family caregiver in their care role and home management plans

Introductions



Dr. Jennifer Shapiro
Palliative Care Physician



Dr. Aamir Haq
Palliative Care Physician

HYPERCALCEMIA

In a Nutshell

Dr. Jennifer Shapiro

June 8, 2022



DISCLOSURE STATEMENT

I have no
actual or
potential
conflict of
interest in
relation to this
presentation

**OBJECTIVE:
“TAKE HOME”
INFORMATION**

A practical overview of calcium in the body.

A discussion of the two most common causes of hypercalcemia

Review the main signs of hypercalcemia

Outline Pharmacologic Treatment Options for Hypercalcemia

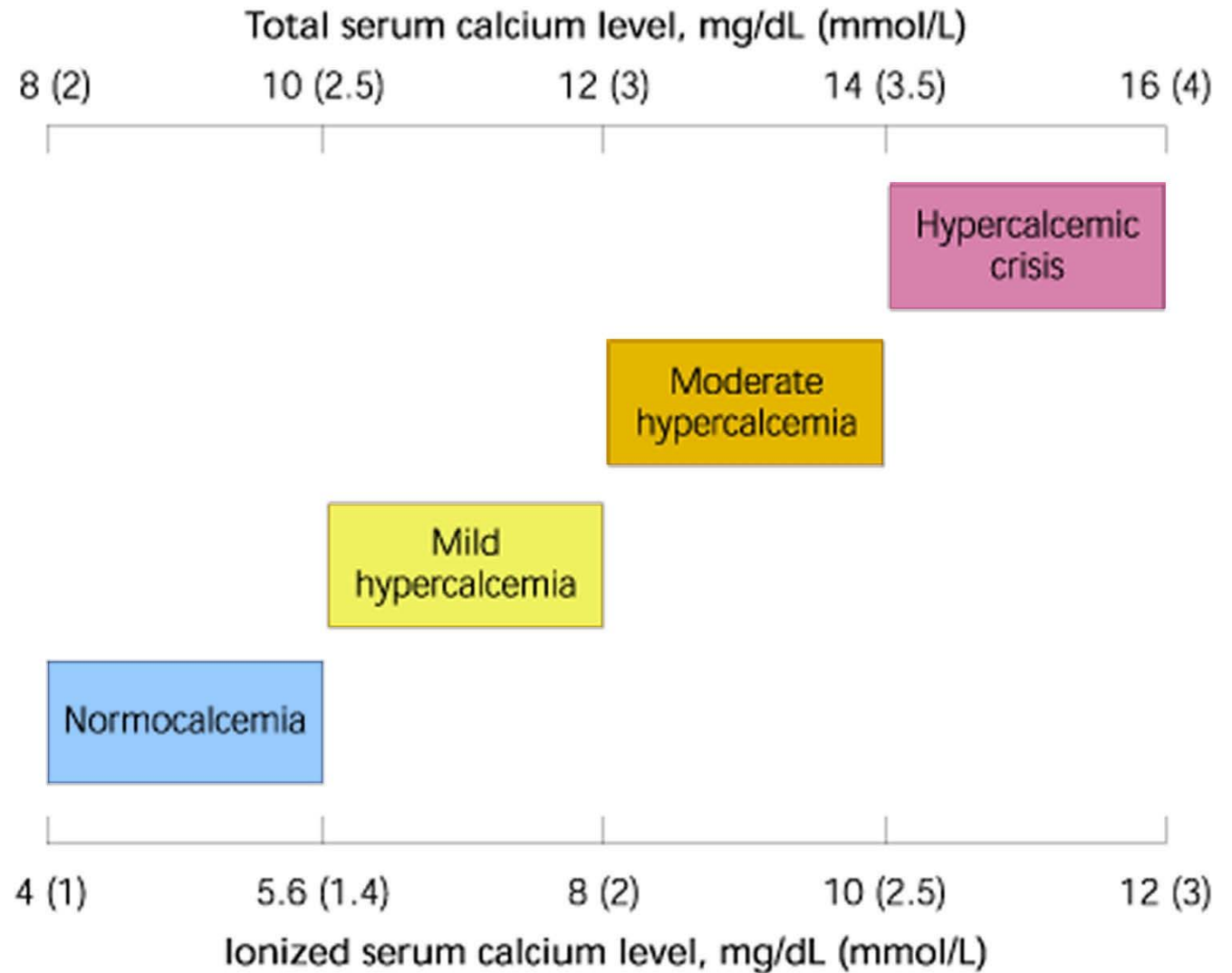
Discuss when to initiate the “Difficult Conversations”

What is Hypercalcemia?

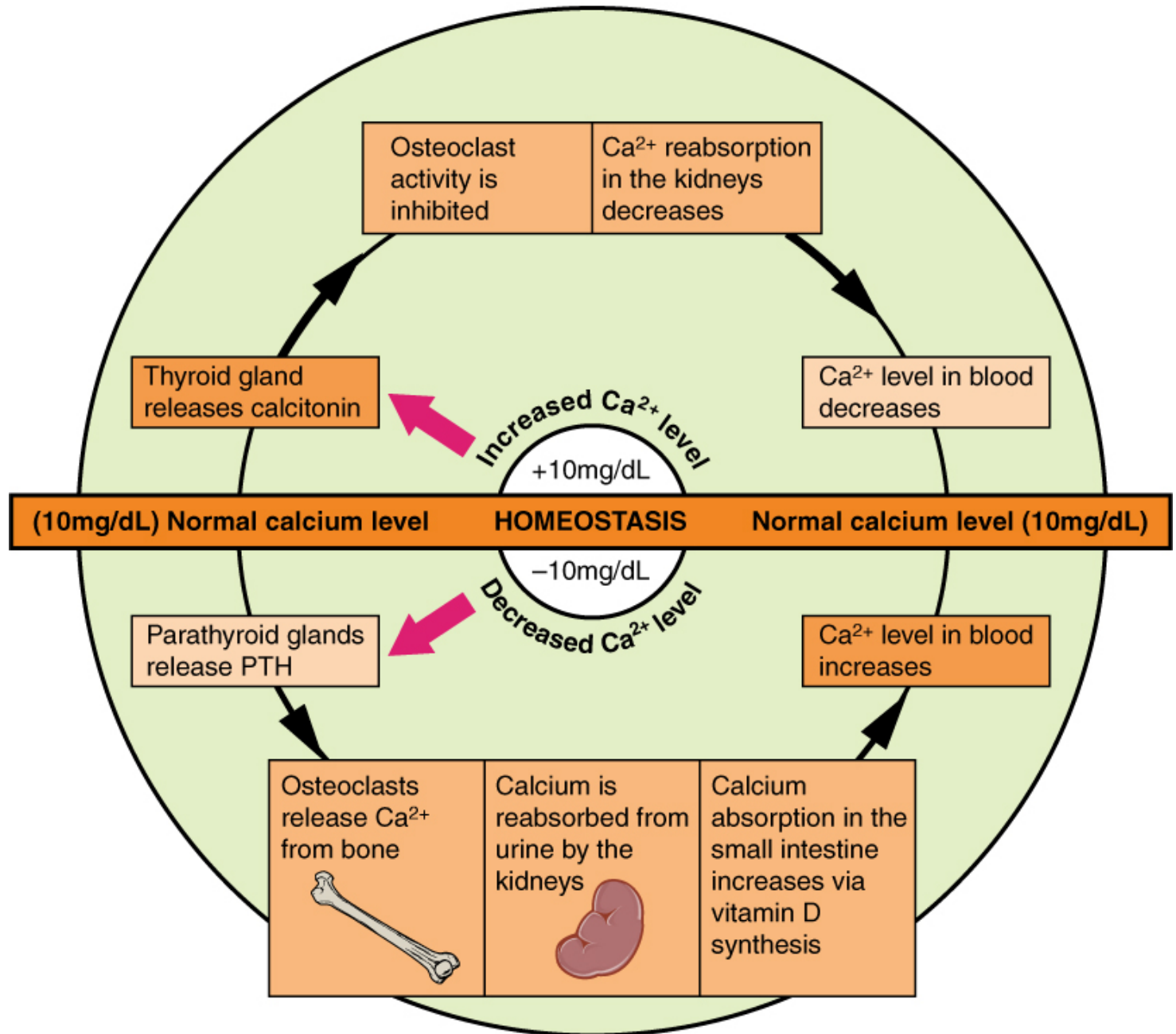
Total Serum Calcium

vs

Ionized Serum Calcium



CALCIUM BALANCE IN THE BODY



TWO MAIN CAUSES OF HYPERCALCEMIA

Hyperparathyroidism

- Primary
- Secondary

Cancer

- Breast
- Lung
- Kidney
- Prostate
- Lymphoma
- Multiple Myeloma
- Ovary

HYPERPARATHYROIDISM

Primary: Too much secretion of PTH from the Parathyroid Gland due to a benign tumour on the gland or familial inherited conditions

Secondary: Increase PTH secretion due to a medical condition unrelated to the parathyroid gland ie: Kidney Disease

CANCER

Cancers that secrete
a hormone similar to
PTH

- Lung, Renal, Breast, Prostate, Ovarian

Cancers that stimulate
calcium loss from the
bones

- Breast, Prostate, Lung, Multiple Myeloma, Lymphoma

SYMPTOMS OF HYPERCALCEMIA

“Stones”

Kidney stones

“Bones”

Bone Pain

Symptoms

“Abdominal
Moans”

Nausea/Vomiting,
Constipation, Abdominal Pain

“Psychic Groans”

Restlessness,
Lethargy/Fatigue,
Confusion/Impaired Memory

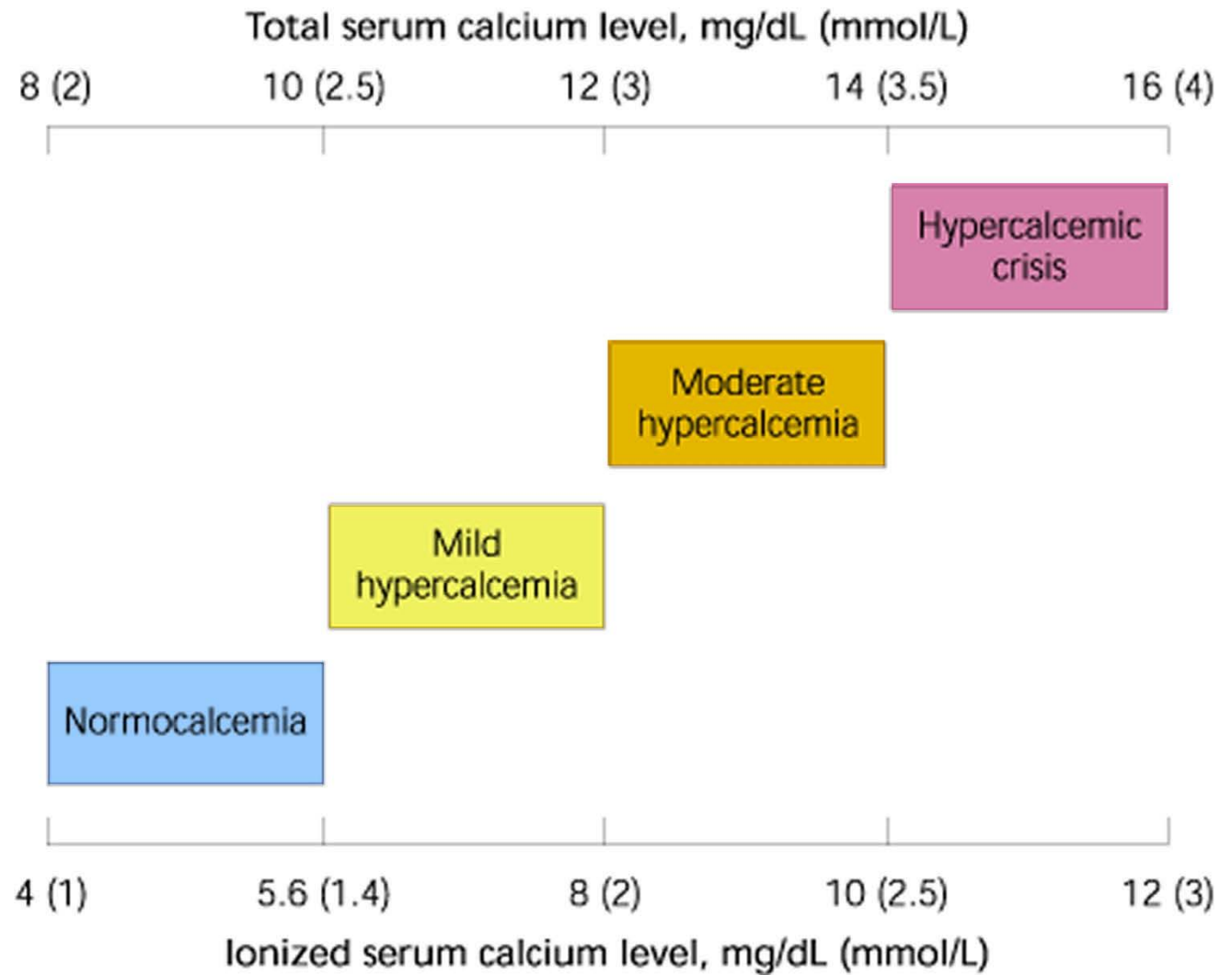
ASSESSMENT IN THE HOME?



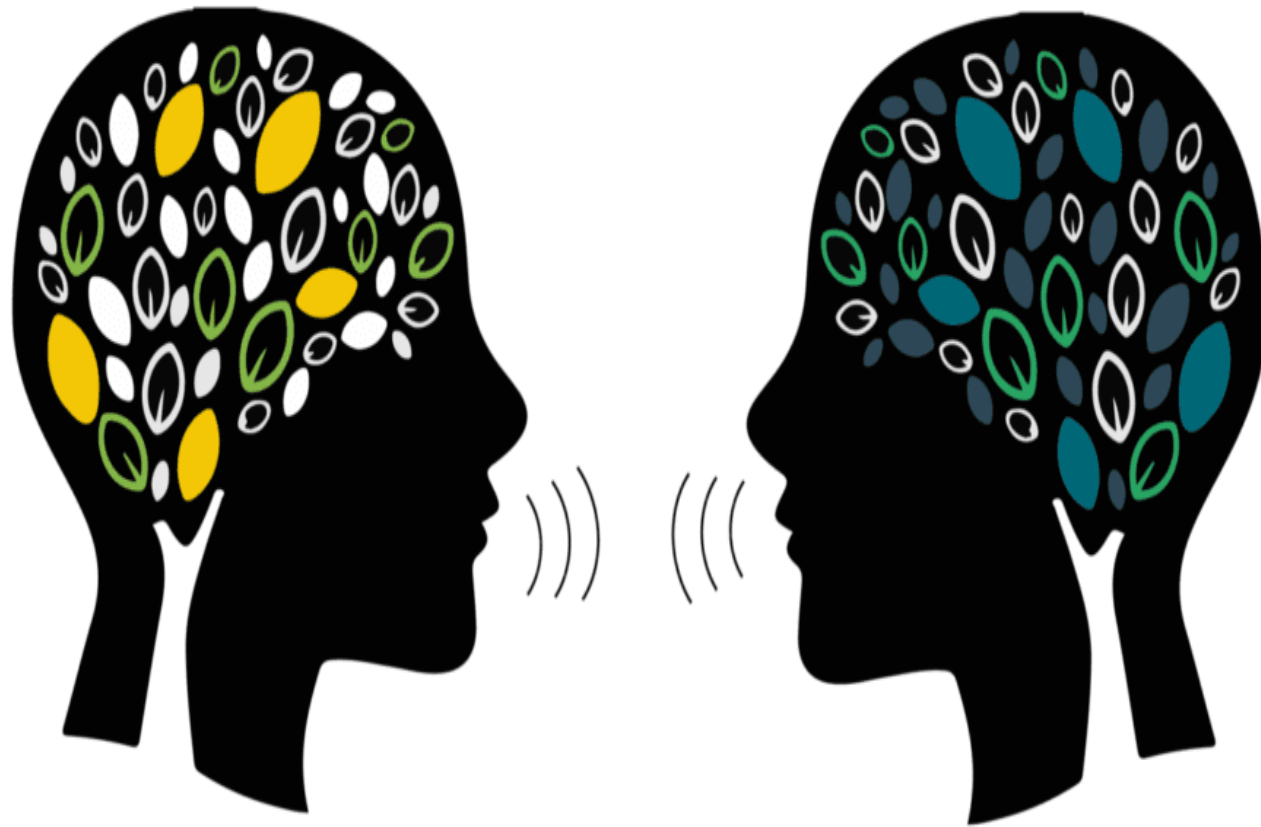
PHARMACOLOGIC TREATMENT OF HYPERCALCEMIA

Agent	Mode of Action	Indication	Cautions
Hydration with N/S with/without furosemide	Enhances filtration and excretion of calcium by the kidney	Moderate to Severe Hypercalcemia with symptoms	May increase the risk of heart failure in elderly patients.
Bisphosphonates (Pamidronate or Zoledronic Acid)	Inhibits release of calcium from the bone	Hypercalcemia due to cancer (but may also be done due to hyperparathyroidism)	Kidney failure, Osteonecrosis of the jaw
Steroids	Helps to relieve tumour inflammation	Cancer	Muscle Weakness, Immune suppression, Side effects
Denosumab (Xgeva)	Prevents release of calcium from the bone	Cancer patients who do not respond to bisphosphonates	Side effects: Abdominal, Fatigue, Muscle Cramps, Dizziness etc.

Hypercalcemia
in cancer
patients is a
very worrisome
diagnosis with a
poor prognosis



DIFFICULT CONVERSATIONS



Goals of care need to be reviewed throughout the diagnostic and treatment process:

How aggressive does the patient want to be?

What happens if the frequency between treatments shortens?

What happens if the symptoms are not resolving even with treatment?

Hypercalcemia – Palliative Case Study

Dr. Aamir Haq, MD, CCFP (PC)

Palliative Physician

Dorothy Ley Hospice Community Physicians

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Case Presentation – “Jack”

- 64-year-old male with neuroendocrine tumour of pancreas metastatic to lung, liver, bone, lymph nodes, and peritoneum
- malignant ascites requiring in-home drainage via intra-abdominal Tenkhoff catheter 3 times a week up to 2000 cc
- primary hyperparathyroidism treated with total parathyroidectomy with partial re-implantation
- multiple endocrine neoplasia (MEN-1)
- co-morbidities include portal hypertension, coronary artery disease, type 2 diabetes, atrial fibrillation, renal stones requiring lithotripsy and ureteric stent, anemia

**I am providing home-based palliative care for symptom management and end of life planning*

Hypercalcemia

- What are potential causes for his recurrent hypercalcemia?
 - primary malignancy of neuroendocrine tumour + MEN-1
 - primary hyperparathyroidism
- Blood work now done weekly with calcium levels ranging from 2.6 to 3.2 (corrected) → what symptoms does he present with?
 - lethargy, confusion
 - generalized body pain beyond baseline

Management

- He has presented to ER a few times for feeling unwell and expedited treatment of elevated calcium
- He otherwise presents to hospital as a scheduled outpatient for IV Zometa (zoledronic acid) + IV fluids + Lasix every few months originally → every month → every 2 weeks now

***as it gets more difficult for him to get out of his home, how will we manage his hypercalcemia?

In-Home Management

- Zometa (zoledronic acid) IV in home as per current hospital regimen → drug coverage by government will be an issue so must apply to Exceptional Access Program for funding
- pamidronate 30 to 90 mg IV in 250 ml infused over 2 to 4 hours in home → must have first dose in hospital
- octreotide 300 mcg SC BID as starting dose to assist with hypercalcemia and GI symptoms from malignancy (nausea, pain, malignant ascites, portal hypertension)
- dexamethasone 4 mg PO OD (starting dose and titrate upward) to assist with hypercalcemia, appetite, energy, mood, bone pain
- must be very careful with any IV hydration as patient has significant 3rd-spacing of fluid (malignant ascites, peripheral edema)

Questions & Discussion



Adjusted Calcium Calculation

Payne et al Formula for Adjusted Calcium

Adjusted Calcium =
Total Calcium (mmol/L) + 0.02 (40 – serum albumin (g/L))

Example:

Pt's Serum Albumin: 28 g/L

Pt's Serum Calcium: 2.45 mmol/L

Corrected Calcium:

$$= 2.45 + 0.02 (40-28)$$

$$= 2.45 + 0.24$$

$$= 2.69 \text{ mmol/L}$$

Be Prepared: Palliative Emergencies in the Home Series

Continues in September 2022



Bleeding



Brain



Blockages


Details and registration

www.cdnhomecare.ca/palliative-care-echo-hub



CHCA ECHO Hub Community

www.echo.cdnhomecare.ca

- Palliative Emergencies at Home Microlearning 
- Recordings
- Presentations
- Evidence-Based Resources

Join the CHCA ECHO Hub Community

Complete the participant information section. Once you receive your log in and password, you can access the valuable resources in the CHCA ECHO Hub.

As a CHCA Palliative Care ECHO Hub member I agree to:

- Participate in the ECHO learning sessions, join the discussion, and give feedback
- Share my expertise and issues to help shape the content of the CHCA Palliative Care ECHO Hub
- Participate in program evaluation to help us better understand our impact and how we can support teams across the country

Register:

First Name* Last Name*

I agree to the statement of participation, to becoming part of the CHCA ECHO Hub community and receiving regular notifications from the CHCA. By completing the registration for the CHCA Palliative Care ECHO Hub, you consent to the collection, use and disclosure of your personal information for the purposes of program planning, evaluation and research.*

Username*

Email*

Palliative Care Emergencies in the Home: An Approach to Guide Home Care

March 26, 2022 / in / by Team CHCA

0% COMPLETE 0/11 Steps

Course Content Expand All

- Course Introduction
- Recognizing Palliative Care Emergencies Expand
1 Topic
- Types of Palliative Care Emergencies Expand
1 Topic
- Involving Patients and their Caregivers Expand
1 Topic
- Considerations for Palliative Care Emergencies in the Home Expand
3 Topics

Thank you

