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Treatment of Hypercalcemia of Malignancy in Adults (2023)

About the Guideline

- This guideline was developed by a multidisciplinary panel of nine clinical experts.
- The literature was evaluated using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology. The panel provided eight recommendations and eight good practice statements regarding treatment of hypercalcemia of malignancy (HCM).

Key Clinical Considerations

Become familiar with the recommendations and best-practice statements provided in this guideline, especially if you work in an acute care setting.

Hypercalcemia of Malignancy in Adults

- Treatment with intravenous (IV) bisphosphonate or denosumab is recommended.
- Treatment with denosumab is suggested over treatment with IV bisphosphonate.
- A combination of calcitonin and IV bisphosphonate or denosumab is suggested as initial treatment for adults with severe HCM (defined as serum calcium greater than 14 mg/dL).
    - Due to tachyphylaxis, calcitonin treatment should be limited to 48 to 72 hours.

Refractory and Recurrent Hypercalcemia

- The use of denosumab is suggested for patients with refractory or recurrent HCM on an IV bisphosphonate.

Hypercalcemia Due to Calcitriol-Associated Malignancy

- Calcitriol-induced HCM is mostly seen with lymphomas and leads to increased calcium and phosphorus absorption in the gastrointestinal tract and increased bone resorption.
- The addition of IV bisphosphonate or denosumab is suggested for patients with HCM from tumors associated with high calcitriol levels who are already receiving glucocorticoid therapy but who continue to have symptomatic or severe hypercalcemia.

Hypercalcemia Due to Parathyroid Carcinoma

- Treatment with either a calcimimetic, an IV bisphosphonate, or denosumab is suggested.
- Surgery should be considered, if possible, for adults with parathyroid carcinoma.
- For patients with mild HCM symptoms, initiating therapy with calcimimetics is suggested.
- For patients with moderate to severe HCM, initiating therapy with an IV bisphosphonate or denosumab is suggested.
- The addition of IV bisphosphonate or denosumab is suggested for patients not adequately controlled despite treatment with a calcimimetic.
- The addition of a calcimimetic is suggested for patients not adequately controlled with IV bisphosphonate or denosumab.

Good Practice Statements

- First-line therapy with hydration and IV fluids is suggested while awaiting the effect of antiresorptive drugs. Adjust therapy to cardiac function.

- Monitor dental hygiene and oral health during antiresorptive therapy.
- Monitor vitamin D levels during antiresorptive therapy.
- Assess kidney function using creatinine clearance or estimated glomerular filtration rate (eGFR) prior to administration of IV bisphosphonate.
- Administer renal-dose bisphosphonate for patients with HCM and kidney insufficiency who are treated with IV bisphosphonate.
- Monitor serum magnesium and phosphorous levels and replete if appropriate.
- For treatment of the underlying malignancy, consultation with a clinical oncologist is recommended.

Reference

El-Hajj Fuleihan, G., Clines, G. A., Hu, M. I., Marcocci, C., Murad, M. H., Piggott, T., Van Poznak, C., Wu, J. Y., & Drake, M. T. (2023). Treatment of Hypercalcemia of Malignancy in Adults: An Endocrine Society Clinical Practice Guideline. *The Journal of clinical endocrinology and metabolism*, *108*(3), 507–528. https://doi.org/10.1210/clinem/dgac621