

# **Approach to Nausea and Vomiting**

***By***

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## **Objectives:**

At the end of this session, the learner will be able to

- List the causes of nausea and vomiting based on organ systems
- Describe the diagnostic approach to nausea and vomiting based on the history and physical exam and diagnostic laboratory and radiographic tests
- Discuss the pharmacologic interventions available for the treatment of nausea and vomiting
- Describe interventions to prevent complications of nausea and vomiting

## **References:**

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- Tramer MR. A rational approach to the control of postoperative nausea and vomiting: evidence from systematic reviews. Part II. Recommendations for prevention and treatment, and research agenda. *Acta Anaesthesiologica Scandinavica*. 45(1): 14-9, 2001 Jan.
- Apfel CC, Korttila K, Abdalla M, Kerger H, Turan A, Vedder I, Zernak C, Danner K, Jokela R, Pocock SJ, Trenkler S, Kredel M, Biedler A, Sessler DI, Roewer N; IMPACT Investigators. A factorial trial of six interventions for the prevention of postoperative nausea and vomiting. *N Engl J Med*. 2004 Jun 10;350(24):2441-51.
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## Section I

### **Directions:**

Begin by reading the references. Use the information from the background article (and other sources as appropriate) to answer the questions following each case. The questions are "open-ended" and therefore there are no right or wrong answers.

### Case Discussion

A 35 year old woman with history of type I diabetes came to the Emergency Department with a 3-day history of nausea and vomiting associated with some epigastric abdominal pain. The entire episode started after her recent discharge from the hospital after a total abdominal hysterectomy. Her medications included insulin, ramipril, aspirin and oxycodone. The only new medicine prescription was oxycodone for treatment of post-operative pain.

- 1) *Discuss the various etiologies for nausea and vomiting.*
- 2) *How can history help with differential diagnosis of a patient presenting with nausea and vomiting?*
- 3) *How can physical exam help with the differential diagnosis and management of a patient with nausea and vomiting?*
- 4) *What are the complications associated with nausea and vomiting? What complications may require the services of a consultant?*
- 5) *What are the pharmacologic agents available for the management of nausea and vomiting?*

### **Case continued.....**

Additional history elements and review of systems were non-contributory.

Physical examination revealed supine blood pressure 110/80 mm Hg, supine pulse 96 beats per minute; Standing blood pressure 88/74 mm Hg, standing pulse 120 beats per minute.

Oral mucosa was dry. Jugular veins were flat. Cardiac and pulmonary exams were normal. The abdominal was soft without distension. The hysterectomy incision showed appropriate healing without inflammation or tenderness. There was no mass or organomegaly. Bowel sounds were normal. The neurological exam revealed no papilledema and no focal deficits. Rectal exam was normal tone with heme negative stool.

- 6) *Based on the above history and physical, what differential diagnosis would you consider in this patient?*
- 7) *What further diagnostic tests would you consider in this patient?*

### **Case continued.....**

Her laboratory tests revealed; Sodium of 132, K 4.5, chloride 88, bicarbonate of 29, BUN of 35, creatinine of 1.0. Her liver enzymes and lipase levels were within normal limits.

8) *How would you approach the management of this patient?*

## Section II

***For each of the following clinical situations select an appropriate anti-emetic medication that can be used for the as the first line of treatment.***

- a) A 75 year old female with history of hypertension and osteoporosis presents to the emergency room with acute onset of vertigo associated with severe nausea and vomiting. After a detailed evaluation in the emergency room she was diagnosed with acute labyrinthitis
- b) A 45 year old female is admitted to the oncology floor for her second round of chemotherapy for Hodgkin's Lymphoma. You receive a call from the nurse that the patient has severe nausea and requests some medications for relief of her symptoms.
- c) You are called at midnight by the nurse in a surgical unit a request for medications for a patient's nausea and vomiting. Patient is a 55 year old male who was admitted to the hospital for total knee replacement. Post-operatively patient was started on morphine PCA. Patient is hemodynamically stable and has no other complaints. Physical exam is unchanged from the previous documented note on the chart.
- d) A 65 year old female with history of diabetes mellitus is being evaluated by her primary care provider for nausea of one month duration that has been steadily worsening in intensity. As a part of her diagnostic evaluation, she underwent gastric emptying studies that shows delayed gastric emptying and gastroparesis. She presents to your office for the management of her nausea.
- e) A 23 year old male is admitted to the hospital with sudden onset of nausea and vomiting. Review of his medical records reveals that this patient has been admitted multiple times in the past with similar complaints. He has had an extensive evaluation for the cause of his symptoms and was diagnosed with "cyclic vomiting syndrome" during his previous admission.