

An interactive process for delivering pharmacologic interventions of migraine headache to first-year medical students.

Jennifer Cleveland, PharmD., BCPS, MBA and Renée J. LeClair, Ph.D.
Department of Basic Science Education, Virginia Tech Carilion School of Medicine

VTC

Virginia Tech Carilion
School of Medicine

Introduction

This interactive session is designed for first year medical students to explore the common clinical symptom of headache and its various management strategies.

This activity fills a gap for **both M1 pharmacology content and connections to contemporary migraine headache management** current with practice guidelines. It also allows for a flexible format that can be readily updated from year to year with minimal modifications and incorporated as an activity into a variety of curricular formats.

Rationale

The **American Headache Society (AHS)** has been a strong advocate for introducing headache education in medical schools.

- Current surveys of undergraduate medical education programs still report 20% of programs with no formal coverage of the content topic

The general consensus across many organizations is that regardless of whether headache is delivered the **emphasis on this common presentation is lacking** despite the overarching clinical implications of migraine pain.

Objectives

By the end of this activity, learners will be able to:

Describe the therapeutic uses, adverse effects, toxicities, and contraindications of agents used for acute and prophylactic management of migraine.

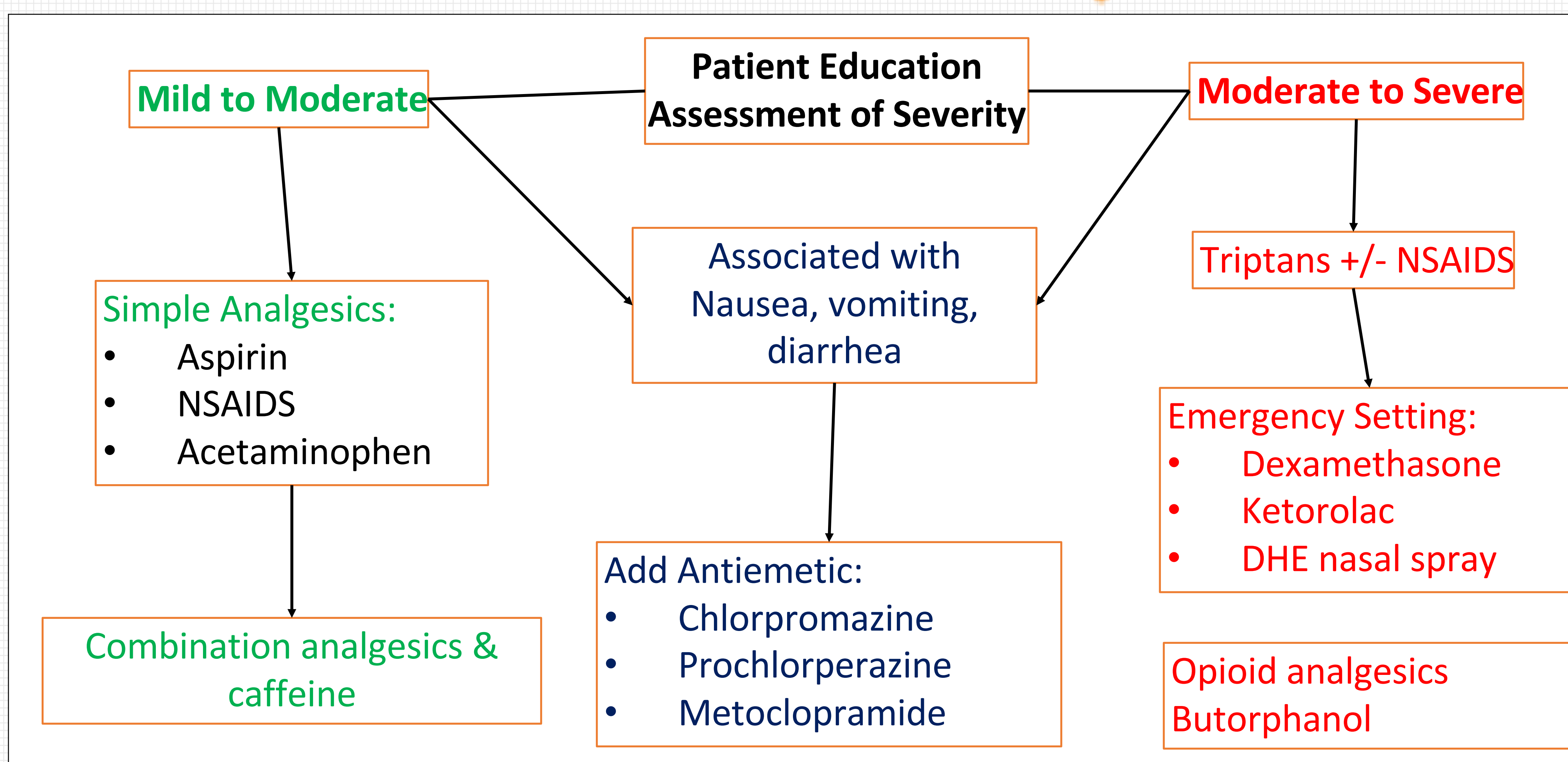
Apply pharmacokinetic parameters and formulation to select migraine treatments.

Interpret information from clinical scenarios to identify agents used for nausea and vomiting associated with migraine.

Activity Development

Significant: Clinical problem used to introduce the session

Eddie is a 40-year-old female who comes into your clinic after having to take another day off from work. ... Eddie's headaches have been severe with increasing frequency over the past few months and are preceded by a feeling of lightheadedness and visual disturbances (disturbed vision, flashing light). The pain she describes is unilateral and is accompanied by severe nausea. Her self-treatment with naproxen 220 mg has not provided much relief.



Same: A series of 12 questions were used to address content. Students worked on one question at a time to focus everyone on the same task.

Examples:

1. What is the mechanism of action of Nonsteroidal Anti-Inflammatories?
2. What are the adverse effects of NSAIDs which necessitate patient counseling?
3. Is there benefit of this over-the-counter (OTC) treatment?
4. How does aspirin differ from other NSAIDs?

Simultaneous and summarized: The activity focuses on drug characteristics and common side effects.

Following each question, students discussed their answers in the large group allowing for answers to be reported before moving forward.

Methods

Using a modified case-based approach, we designed an interactive session for M1 students. Students **prepared** for the session using basic learning **objectives** and a **table of drugs** used to treat headache pain. We distributed a **patient scenario**, followed by a series of **discussion questions** to explore headache management.

Assessment

We assessed:

1) Student performance using questions purchased from the NBME at two different time intervals, Block IV and VIII.

2) Student perceptions were evaluated using both qualitative and quantitative data collected from faculty and end of block evaluations.

Results

The students' performance was significantly increased when compared to the national average (n=5; 90.6 ± 6.02% vs. 82.6 ± 8.5%; p=0.0052). Student perceptions of the overall quality of the faculty, content presentation and material were positive (4.4/5.0). Two themes emerged in the end of block evaluations. Students commented positively on the pre-reading materials and students commented on the need to address underlying physiology associated with the discussed pharmacology.

Discussion

This is a flexible activity that can be delivered in a short time (50-minutes) by a single faculty member in a variety of curricular structures. Our data demonstrate strong student performance and suggest incorporating additional content would enhance delivery.