**Case Scenario**

**Case scenario: Answer to Questions**

Mia is a 35year old female who is complaining of severe headaches. She is "borrowing” her sister’s migraine medication and she reports that “it works.” She is breastfeeding her 2-month-old infant and she is concerned that the medication might be affecting the baby. After further investigation, you diagnose Mia with migraine headaches and prescribe a medication to treat them.

**Describe the clinical problem are you seeking to treat and include 2-3 clinical goals.**

Migraine is a primary headache disorder characterized by headaches of varying intensity. It results from specific psychological changes in the brain and can be accompanied by light, sound or smell sensitivity (Davanzo, 2014).

The clinical goals include:

To relieve symptoms resulting from migraine.

To reduce the risks of drug toxicity to the infant.

**Briefly explain appropriate non-pharmacological interventions, such as lifestyle modifications, to address the particular clinical problem you have identified in #1.**

The patient should maintain a regular eating and sleeping schedule, making sure that she is well hydrated and avoid foods such as red wine and dairy products which have been proven to trigger migraine.

Exercises which promote muscle relaxation also help relieve a migraine headache. Such exercises include yoga, progressive muscle relaxation, guided imagery and meditation (Hale & Rowe, 2017).

**Review and name a relevant, clinical practice guideline that supports treatment decisions for the clinical problem you have identified.**

Guidelines for maternal Tylenol use during breastfeeding by MOTHERISK.

**How was the clinical practice guideline developed and by whom?**

The clinical practice guideline was developed to answer the health risk question that came up due to the side effects that were being experienced by mothers taking a combination of acetaminophen, codeine, and caffeine while lactating.

The Questions were formulated by Motherisk Team at a hospital for Sick Children in Toronto Madadi et al., 2009).

**Consider the strength of the evidence (clinical trials, cohort studies, consensus, etc.) upon which the recommendation is based.**

The recommendation was based on the evidence of calculating the concentration of Tylenol in the urine of the lactating mother and the infant. Only 0.23% of the drug was found in breast milk. The conclusion was made based on finding alternatives to codeine use as an analgesic in combination with acetaminophen. And if used, the mother must be informed of the side effects (Madadi et al., 2009).

- Consider the population to which the clinical practice guideline applies.

The clinical guideline applies to all the lactating mothers across the world, suffering from a severe postpartum headache.

**Using multiple sources of information, select the appropriate class of medication for the clinical problem you are seeking to address. Consider the age, sex, comorbidities (if any) and medication pharmacokinetics.**

Acetaminophen (Tylenol) – It is an analgesic, non-narcotic drug safe to use by breastfeeding mothers.

**Using multiple sources of information, select a safe and appropriate dose of a medication from the class of medications you selected in #4.**

Tylenol pills, 1 pill (500mg) 4 times a day.

In severe cases, the patient can take up to 2 pills (1g) per dose.

The pills need to be taken 2 hours after a meal.

The duration of treatment is between 5 to 7 days (Hale & Rowe, 2017).

**Justify your choice of medication against other possible choices.**

Tylenol contains paracetamol (major component), which is a very safe antipyretic during breastfeeding, as compared to other drugs. Only 0.23% of the drug can be ingested in breast milk. However, if taken immediately after breastfeeding, the drug only remains in the blood of the lactating mother for 30 minutes. It is excreted in urine within 3 to 4 hours after administration (Rope, 2014).

**Include the cost of the medication. Is it available at a reduced rate at a retail store such as Walmart or Target?**

Tylenol is available in both regular strength and extra strength at an affordable price, available in retail outlets such as Walmart. The price of 30 tablets of acetaminophen (Tylenol) extra strength range from $1.00 to $4.93 (Walmart = $2.71). While 30 tablets of regular strength acetaminophen range from $1.00 to $6.45 (Walmart = $2.51) (Davanzo, 2014).

**How will you assess and monitor the efficacy of the medication you have prescribed?**

Tylenol is well tolerated with monitored acetaminophen therapeutic range of 10 to 25microgram per milliliter. In as much as the side effects of the drug are very rare in the baby, it is important for the mother to watch out if the baby experiences any signs of vomiting, diarrhea or unusual sleepiness.

If taken in the recommended dose, the mother will not experience any side effects. However, in large doses, or in case of allergic reactions, the mother might experience side effects such as diarrhea, itching, dark urine, loss of appetite, clay-colored stool, abdominal disturbances and yellowing of skin or eyes.

Lastly, the drug should be able to work within 5 to 7 days. However, in case any of the above side effects are suspected even before completing the dose, the patient is advised to stop using the drug and consult the doctor immediately (Rope, 2014).

**How will you address side effects?**

Advice the patient to take the medication exactly as per the prescription.

Side effects such as lightheadedness, dizziness, nausea, and vomiting can be minimized by lying down.

The patient also needs to inform the doctor of all the medication that she is taking to avoid side effects as a result of the drug-drug interaction (Davanzo, 2014).

**List any major drug-drug, drug-food interactions you found during your research.**

Drug-drug interactions: Ketoconazole, epinephrine, mipomersen, and teriflunomide among other drugs, interact with acetaminophen leading to side effects of the liver and kidney.

Drug-food interactions: Tylenol should not be taken with alcohol or caffeine. Alcohol may precipitate liver problems among other side effects (Rope, 2014).

**Provide 3-5 points for client teaching related to the medication.**

Too much use of acetaminophen can cause severe liver damage that might require a liver transplant or even lead to death.

The patient should not take more than one drug that contains acetaminophen at a time.

Before using acetaminophen, the patient should inform the doctor if they have ever experienced any liver disease (Davanzo, 2014).

**References**

Madadi, P., Moretti, M., Djokanovic, N., Bozzo, P., Nulman, I., Ito, S., & Koren, G. (November 01, 2009). Motherisk Update: Guidelines for maternal codeine use during breastfeeding. Canadian Family Physician, 55, 1077.

M, D. C. P. W., & Rope, K. (2014). The complete guide to medications during pregnancy and breastfeeding: Everything you need to know to make the best choices for you and your baby. New York: St. Martin's Press.

Hale, T. W., & Rowe, H. E. (2017). Medications & mothers' milk. New York, NY: Springer Publishing Company.

Davanzo, R., Bua, J., Paloni, G., & Facchina, G. (November 01, 2014). Breastfeeding and migraine drugs. European Journal of Clinical Pharmacology, 70, 11, 1313-1324.