

Problem Based Learning Exercise
“Melissa”
Clinical Case
Facilitator Notes

Scenario Part 1

Plausible Hypotheses

1. Folate deficiency
2. Genetic defect

Additional Information

1. Comprehensive medical and family history, particularly any history of genetic defects and medical records from the two previous pregnancies
2. Physical exam and initial laboratory tests for the first trimester of pregnancy.
3. Serum folate levels
4. Eating habits, living environment

Scenario Part 2

Plausible Hypotheses

1. Genetic defect
2. Mercury poisoning or more generally an environmental toxin

Additional Information

1. Consult with geneticist
2. Question patient about types and sources of the fish she eats
3. Question patient about potential exposure to other environmental toxins.

Scenario Part 3

Plausible Hypothesis

1. Mercury poisoning

Additional Information

1. Heavy Metals Profile, Blood
2. Contact Public Health Department for fish advisories and information related to environmental pollutants.

Scenario Part 4

Objectives

At the conclusion of this exercise, the student should be able to:

1. Identify mercury poisoning as the most likely cause of the previous miscarriage and child with spina bifida.
2. Identify local and state Public Health agencies that can provide information about fish consumption advisories and exposure to environmental toxins.
3. Increase awareness of the impact on health of environmental pollutants.
4. Recommend an appropriate treatment and pregnancy management plan. Describe potential pregnancy outcomes.
5. Describe the symptoms of mercury poisoning and its effects on sensitive populations such as pregnant or nursing mothers, infants and young children.

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Problem Based Learning Exercise
“Melissa”
Generalist Case
Facilitator Notes

Scenario Part 1

Plausible Hypotheses

1. Folate deficiency
2. Genetic defect
3. Exposure to an environmental toxin

Additional Information

1. Comprehensive medical and family history, particularly any history of genetic defects and medical records from the two previous pregnancies
2. Serum folate levels
3. Eating habits, living environment

Scenario Part 2

Plausible Hypotheses

1. Genetic defect
2. Mercury poisoning or more generally an environmental toxin

Additional Information

1. Consult with geneticist
2. Question patient about types and sources of the fish she eats
3. Question patient about potential exposure to other environmental toxins.
4. Research toxic effects of mercury.

Scenario Part 3

Plausible Hypothesis

1. Mercury poisoning

Additional Information

1. Heavy Metals Profile, Blood
2. Contact Public Health Department for fish advisories and information related to environmental pollutants.

Scenario Part 4

Objectives

At the conclusion of this exercise, the student should be able to:

1. Identify mercury poisoning as the most likely cause of the previous miscarriage and child with spina bifida.
2. Identify local and state Public Health agencies that can provide information about fish consumption advisories and exposure to environmental toxins.
3. Increase awareness of the impact on health of environmental pollutants.
4. Describe the symptoms of mercury poisoning and its effects on sensitive populations such as pregnant or nursing mothers, infants and young children.

Web Resources

<http://www.healthcentral.com/peds/top/001651.cfm>

Center for Neighborhood Technology (2000). The Suppressed EPA Mercury Study. Available: On-line: http://www.cnt.org.air/hg_home.htm

Environmental Protection Agency (1999). Mercury Update: Impact on Fish Advisories. Available: On-line: <http://www.epa.gov/OST/fish/mercury.html>

Environmental Protection Agency (1999). Polychlorinated Biphenyls (PCBs) Update: Impact on Fish Advisories. Available: On-line: <http://www.epa.gov/OST/fish/pCBS.pdf>

Environmental Protection Agency (1997). Should I Eat the Fish I Catch: A guide to healthy eating of the fish you catch. Available: On-line: <http://www.epa.gov/OST/fish/fisheng.pdf>

Natural Resources Defense Council (1997). Our Children At Risk: The 5 Worst Environmental Threats To Their Health. Available: On-line: <http://www.nrdc.org/health/kids/ocar/chap5e.as>

Additional Resources

Schuman, S.H. (1997). Environmental Epidemiology for the Busy Clinician. Harwood Academic Publishers: Amsterdam.

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