University of Jordan
Faculty of Medicine

Medical Committee
The University of Jordan

Community Medicine

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Maternal Mortality

- An investigation of maternal and infant mortality reflects the condition of the country.

- The 1999 WHO investigation of global maternal mortality mostly reflects the statistics of developing countries. This is because the frequency of maternal mortalities is much higher in developing countries than developed countries.

- The most common causes of mortality are:

1. Severe bleeding. (25%)
2. Infection. (15%)
3. Unsafe abortions. (13%)
4. Eclampsia (12%)
5. Obstructed labor. (8%)
6. Direct causes. (8%)
7. Indirect causes. (20%)

You don't need to memorize the percentages, but the sequence is very important and will most likely be needed for the exam.

- Direct complications make up 75% of all the causes of mortality.
- Indirect causes aggravated by pregnancy, such as malaria, hepatitis, cancer, diabetes and anemia, make up 20%.

- Averages by region are:

13/100000 in developed countries. 220/100000 in the Middle East. 940/100000 in developing countries.

(Maternal mortalities are calculated per 100000)

This does not mean, however, that the countries within the region all have the same average. For example, in some developed countries, it can be as low as zero.

- The lack of antenatal care in developing countries is the most important cause of maternal mortality.

- A study in the mid 90s by the Ministry of Health determined the main direct risk factors for mortality in Jordan:

1. Toxemia (pre-eclampsia): now the fourth or fifth cause in line, it is hardly ever seen anymore as a result of the improved quality of antenatal care.
2. Anesthesia complications: occur mostly during Caesarian-sections, which are only done when necessary in Jordan, since we do not have the suitable facilities for controlling the operation. In other more developed countries, it is an option for women, an elective surgery. Caesarian-section occurrence is indirectly related to the health services' status in developing countries. The lower the incidence, the better the health services, as there were no pregnancies that turned complicated and needed the surgery.
3. Severe bleeding: now the number one cause in Jordan.
4. Toxic shock: caused by microbial infections.
5. Cardiac/renal failure: Pregnancy almost never causes either of these conditions. There has to be an already existing condition to escalate during, or after pregnancy. They are considered indirect causes.

Remember: Toxemia and toxic shock are not the same condition. Toxemia refers to pre-eclampsia, which is an infection during pregnancy due to physiological changes. While toxic shock is caused by a microbial infection.

- When investigating indirect causes of mortality, risk factors should be taken into account:

1. Age: women younger than 20 and over 35 are at higher risk than other women.
2. Height and weight: short women, obese women, and underweight women could suffer from complications during pregnancy.
3. Residency: this is related to social class. For example, women who live in poverty are at higher risk as a result of their often worse general conditions, health standards, nutrition and accessibility to health care services.
4. Education: women who are aware of their needs and condition during pregnancy are more likely to have a safer pregnancy than women who are not educated well enough.
5. Income: also related to social class.
6. Parity: it is a pregnancy count which indicates the probability for complications to occur. A woman going through her first pregnancy is at higher risk than a woman who has gone through a couple before. But a woman who has had five pregnancies or more is also at higher risk.
7. Past medical history: renal failure, diabetes, high blood pressure, heart conditions, epilepsy, etc.
8. Past obstetric history: a history for past complications. A woman who has experienced pre-eclampsia, bleeding, premature birth or repeated abortions before is at higher risk than one who has not.
9. Smoking, drug use, alcohol: if the woman is a smoker, she will be asked to quit. Drugs could also mean medication. The dose is either lowered, or the drug stopped completely- must be controlled.
10. General condition: preconceptionally, a woman should be healthy enough for pregnancy.
11. Hb level: anemia, blood pressure, and general condition of blood.

- There was a study done by WHO, UNICEF, UNFPA, and WB in 1990-2008 in Jordan to investigate maternal mortality. Its targets are to reduce mortality by 3 quarters by 2015, which is to be achieved by attendance of skilled health personnel during pregnancy and birth. As well as providing access to reproductive health, increasing the contraceptive prevalence rate (decreasing fertility), decreasing the adolescent birth rate (by increasing the average age of marriage), promoting antenatal coverage (visits for check-ups), and promoting family planning.

- The mortality rate in Jordan in 1995/1996 was about 41/10000. It was about 19/100000 in 2007/2008, so we are close to achieving our goal.

- Investigating maternal mortality rates can be quite difficult considering the amount of deaths that are not included because they either aren't reported or are thought to be caused by something other than pregnancy. Thus, most rates are underestimated.

- Comparing Jordan's rates to other Middle East countries' rates places it in fourth place, preceded by UAE, Saudi Arabia, and Kuwait, due to better antenatal care in these three countries. The highest rates are observed in Sudan, Yemen, and Egypt.

- Causes of mortality according to a study in 2005 in Jordan:

1. Hemorrhage
2. Thromboembolisms
3. Septicemia (infection)

- Toxemia isn't even mentioned, although it was the most prevalent complication before. This is due to much better antenatal care, and monitoring of the mothers condition during pregnancy.

- Indirect causes of mortality in Jordan are:

1. Cardiac diseases: most important.
2. Neurologic diseases: strokes, epilepsy.
3. Infections: hepatitis.
4. Anemia.
5. Renal failure.

- As mentioned before, these indirect causes make up 20% of all causes.

Maternal Nutrition

-There are three main subgroups that have special nutritional needs; Children (growing), pregnant women, and the elderly (degenerative diseases).

-All pregnant women need more food. They need to increase their protein intake, and to take supplements such as iron, and folic acid.

-Lactating women require a high amount of energy (higher than pregnant women).

-When there is no increase of intake of food, the body's own reserves are used to provide nutrition, which leads to malnutrition and chronic anemia.

-Energy needs increase in the second and particularly the third trimester of pregnancy. Inadequate weight gain during pregnancy often leads to a low birth weight, which increases the infant's risk of dying.

-Pregnant women require more protein, iron, vitamin A, vitamin B complexes, Iodine, folate, etc.

-Deficiency of certain nutrients are associated with a number of complications including maternal complications, fetal/newborn death, birth defects, and decreased mental and physical health of the child.

-Lactating women might not produce milk if severely malnourished. They also need a lot of water to stay hydrated, since they lose a lot of fluids while breastfeeding.

-Quality of food is more important than quantity.