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What Are The Risk Factors Of Maternal Mortality

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Abstract :

Maternal mortality is unacceptably high . About 830 women die from pregnancy or childbirth – related complications in the world every day . The 99% of all maternal deaths occur in developing countries . The maternal mortality is higher in women living in rural areas and among poorer communities . The young adolescents face a higher risk of complication and death as a result of pregnancy than other women . It was estimated that in 2015 , roughly 303000 women died and following pregnancy and childbirth . Almost all of these deaths occurred in low-resource settings , and most could have been prevented⁽¹⁾. In sub-saharan Africa , a number of countries halved their levels of maternal mortality since 1990 . In other regions, including Asia and North Africa, even greater headway was made. Between 1990 and 2015, the global maternal mortality ratio (the number of maternal deaths per 100 000 live births) declined by only 2.3% per year between 1990 and 2015. However, increased rates of accelerated decline in maternal mortality were observed from 2000 onwards. In some countries, annual declines in maternal mortality between 2000–2010 were above 5.5% . Between 2016 and 2030 , as part of the Sustainable Development Goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births. In this report will discuss about the risk factor of maternal mortality.

Introduction :

The Maternal mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of duration and site of pregnancy from any cause related or aggravated by the pregnancy or its management and NOT due to any accidental or incidental cause . Maternal Mortality Rate : Is the total number of female deaths due to complications of pregnancy, childbirth or within 42 days of delivery from puerperal causes in an area during a given year divided by total number of women of child bearing age (15-45 years). Maternal Mortality Ratio : Total number of female deaths due to complications of pregnancy, childbirth or within 42 days of delivery from puerperal causes in an area during a given year divided by the total number of live births in the same area and year . The risk factors are :

- 1- Quality of Health Care.
- 2-Physical, Economic, Social.
- 3-Nutritional Status of the mother.
- 4-Age of the mother.
- 5-Repeated pregnancies.
- 6-Interval between two consecutive pregnancies.

The causes : A – Direct maternal death : That's the result of a complication of the pregnancy , delivery , puerperium or their management . 1- Haemorrhage : It's the

most common cause of maternal mortality, can occur in the antenatal period which is called Antepartum haemorrhage which occurs in the second and third trimester because of either abnormal implantation of placenta (placenta praevia) or separation of placenta (abruptio placentae). Also it can occur in the first trimester (abortions) which may lead to massive bleeding and shock and death of patient.

2- Embolism: It's also considered as the second of maternal mortality either due to amniotic fluid embolism or due to pulmonary embolism which mostly occurs in women with valve heart disease such as mitral stenosis or presence of prosthetic valve.

3 – Infection: Septicemia is also one of the major causes of maternal mortality due to chorioamnionitis or septic abortion or septic shock.

4 – Eclampsia: The pregnancy-induced hypertension can be so severe leading to fits called Eclampsia leading to severe hypoxia and intracranial edema and death.

5 - Improper management: Usually occurs during labor if not managed well as we know prolonged labor particularly in multipara women or abnormal presentation of fetus leading to rupture of uterus and death of mother and fetus if not managed as early as possible.

B - The indirect maternal death: that is pregnancy-related death in a patient with a preexisting or newly developed health problem. such as

- 1- Anemia
- 2- Malignancy e.g Breast Cancer
- 3- Endocrine diseases e.g Diabetes
- 4- Blood disorder e.g Thalassemia minor
- 5- Mental disorder e.g puerperal psychosis
- 6- CVS diseases e.g mitral stenosis (2).

Discussion :

Postpartum hemorrhage (PPH) is the leading cause of maternal mortality. Maternal deaths resulting from bleeding during and after cesarean have recently increased in South Africa: in the triennial report on confidential enquiries into maternal deaths in 2011–2013, such bleeding accounted for more than one-third of maternal deaths due to obstetric hemorrhage. The cause-specific case fatality rate for hemorrhage during cesarean delivery was 5.5 deaths per 10 000 cesareans performed. More than 70% of the deaths were considered to be clearly avoidable (3)(4). As we know the major cause of maternal death is haemorrhage, Salome Maswime had studied in 2016 Maternal death due to cesarean-related haemorrhage in south Africa and found There were 123 251 deliveries and 17 maternal deaths due to bleeding during or after cesarean (3.2 deaths per 10 000 deliveries). Risk factors included previous cesarean delivery, preoperative anemia, and placental abruption. Uterine atony and surgical trauma were the main causes of bleeding. Five (29%) women died before the cause of bleeding was found. Avoidable factors included delays in the recognition and management of shock. Thirteen (76%) women died within 48 hours of the cesarean procedure. Deaths due to bleeding during and after cesarean have multifactorial causation. Maternal healthcare systems must be strengthened, with attention to the knowledge and skills of health workers. This requires increased clinical vigilance, a rapid effective response to obstetric hemorrhage and shock, and overall health system strengthening. The maternal death due to sepsis in state of Michigan in October – 2015 by Melissa E. Bauer and Krishna Rao and they found Maternal sepsis was the cause of death in 14.6% (22/151) of pregnancy-related deaths. Of 22 deaths, 13 women presented to the hospital with sepsis, two developed sepsis during hospitalization, and seven developed

sepsis at home without admission to the hospital for care. Review of available hospital records revealed delays in initial appropriate antibiotic treatment occurred in 73% (11/15) of patients. Delay in escalation of care also occurred and was identified in 53% (8/15) of patients. Maternal deaths from pregnancy-related sepsis are uncommon in the United States, but the few that do occur may be preventable with better recognition of early sepsis, prompt administration of appropriate antibiotics, and care escalation when necessary, a research team advises. A review of maternal deaths from sepsis in Michigan during an 8-year period showed that sepsis was identified as the cause of death in 22 of 151 women who died from pregnancy-related causes. The available hospital records for 15 cases showed that for 11 patients, there was a delay in starting antibiotics, and in eight cases, there was a delay in escalation of care. Eclampsia the major cause of maternal mortality in Eastern India by Ratan Das and Saumya Biswas in April - 2015 and they found the Eclampsia accounted for 43.35% of total maternal deaths, with case fatality of 4.960%. The commonest mode of death in eclampsia is pulmonary oedema. Death due to eclampsia commonly occurs in younger age group of 19–24 years and in primi gravid. Eclampsia related deaths were mostly seen in illiterate and unbooked cases. Maternal deaths were also very common in lower socio economic status. Eclampsia is a very serious complication of pregnancy which is responsible for high maternal and perinatal mortality, Eclampsia is still prevalent in India with high maternal and perinatal mortality that's due to poor access to healthcare is disproportionately higher in rural populations of the poorer states of India.

Conclusion :

- Maternal mortality refers to deaths due to complications from pregnancy or childbirth.

Regarding to the above mentioned studies, the major risk factors of maternal mortality are haemorrhage, sepsis and eclampsia, so, the goal we have to reduce the rate of maternal mortality as minimum as possible by :-

- Women must have access to skilled care before, during and after they give birth.
- Health providers must be trained in emergency obstetric care. Health centers and clinics must have surgical supplies to handle complications.
- Maternal health-care systems must be strengthened, and communities mobilized and educated to improve deliveries in birth clinics.
- Skilled community-based birth attendants should be trained and posted to increase maternal coverage in remote areas.
- Give incentives to health providers to motivate them to do their job effectively.

References :

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