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For Safe Motherhood

RAF
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SAVING MOTHERS' LIVES IN PAKISTAN BY OPTIMIZING USE OF MAGNESIUM SULPHATE IN ECLAMPSIA

Policy Brief

Saving Mother's Life: Addressing Barriers to the Use of Magnesium Sulphate

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Saving Mothers' Lives in Pakistan by Optimizing Use of Magnesium Sulphate in Eclampsia

Summary:

In Pakistan, the complications of pregnancy and childbirth are the leading cause of death amongst women of reproductive age. The maternal mortality ratio (MMR) is 276 deaths per 100,000 live births in Pakistan versus 16 per 100,000 in developed countries. Eclampsia and severe Pre-Eclampsia are the third most common causes of maternal mortality in Pakistan[i]. Evidence from the Cochrane review and collaborative Eclampsia trial, strongly recommends magnesium sulphate as the first line treatment to prevent fits in these life threatening conditions[ii]. Despite compelling evidence, magnesium sulphate use in Pakistan is negligible. The barriers include lack of demand, interrupted availability, training gaps, cumbersome dosage calculation and policy obstacles[iii].

This policy brief is a call to action for policymakers and health professionals to optimize the use of magnesium sulphate in Eclampsia.

Policy Recommendations

- Preparation of standard provincial guidelines for the use of magnesium sulphate for every level of care.
- A mandate of availability of magnesium sulphate in each province.
- Definitive treatment of Eclampsia and severe Pre-Eclampsia at the tertiary care.
- Use of intramuscular magnesium sulphate at primary and secondary care levels.
- Referral guidelines for primary and secondary care levels.
- Training of all health workers in public and private sector.
- Preparation of pre-filled dosage by the pharmaceuticals for IV use in the tertiary facilities.

Introduction:

Every 10th maternal death is due to

Eclampsia in Pakistan

PDHS - 2007

Fits with high blood pressure in pregnancy (Eclampsia) is among the five leading causes of maternal deaths worldwide. The risk of dying from Eclampsia is approximately 14 times higher in a developing country compared to a developed country[iv].

Magnesium sulphate is recommended by the World Health Organization (WHO) as the most effective, safe, and low-cost treatment available for severe Pre-Eclampsia and Eclampsia and has been on the WHO's essential medicines list since 1996. A significant portion of the maternal deaths from Eclampsia reported from many developing countries are among women who had multiple seizures while reaching the tertiary care hospital[v]. After a randomized placebo controlled trial (Magpie trial) in 33 countries on over 10,000 eligible women, magnesium sulphate is now considered as standard of care to prevent convulsions in severe Pre-Eclampsia and Eclampsia[vi].

With the introduction of magnesium sulphate, a significant reduction in maternal mortality was observed[vii] , for example in Dhaka, maternal deaths fell from 16% to 8%[viii].

APPROXIMATELY 2,000 MATERNAL DEATHS CAN BE PREVENTED BY USING MAGNESIUM SULPHATE IN PAKISTAN

Various studies in Pakistan have identified the non- availability of magnesium sulphate in the public health facilities[ix]. The barriers to the use of magnesium sulphate in Pakistan include:

- Lack of clear policy guidelines for various levels of health care professionals
- Lack of demand by the provider mainly because of fear of use
- Difficulty in preparing the intravenous dosage.

Optimizing the use of magnesium sulphate in severe Pre-Eclampsia and Eclampsia will considerably reduce maternal deaths in Pakistan and will help achieve the Millennium Development Goals. After the devolution, provinces have their own health policies and directions. However, there are no detailed provincial guidelines for the use of magnesium sulphate at various levels of care in any of the provinces.

Policy Options:

A. Provincial guidelines for the use of magnesium sulphate

After the devolution, provinces should have concrete and succinct policy guidelines for each level of care most suited for their peculiar circumstances. Use of magnesium sulphate for Eclampsia is mentioned in the treatment guidelines of national policy documents but these do not state a clear policy regarding the use of magnesium sulphate at various levels of health care. Hence, the use is limited to some tertiary care facilities only.

B. A mandate of availability of magnesium sulphate in each province

Though magnesium sulphate has been on the essential drug list, the availability in public as well as private sector is a major issue. All the provinces should not only include magnesium sulphate in the essential drug list but also ensure an un-interrupted supply.

C. Improved blood pressure monitoring during antenatal care

Eclampsia prevention can only be achieved through early diagnosis of hypertension. Currently, the antenatal care in the community is provided by the LHWs who are not trained to measure blood pressure. However they are supposed to refer women for blood pressure monitoring to the basic health unit where the facility exists.

The provinces can decide whether they have the financial capacity to train the LHWs to measure blood pressure, or would prefer to improve the referrals to the BHU.

D. Training for definitive treatment of Eclampsia and severe Pre-Eclampsia at the tertiary care

Magnesium sulphate is proved to be effective for use in both Eclampsia and in severe Pre-Eclampsia for the prevention of convulsions. In the tertiary care facilities in Pakistan, the use of magnesium sulphate for Eclampsia is still not optimum and only a few are using it in severe Pre-Eclampsia.

The use of magnesium sulphate for severe Pre-Eclampsia is an uphill task at the primary care level in Pakistan. At the primary care level, fits in Eclampsia are easy to diagnose but the diagnosis of severe Pre-Eclampsia requires clinical expertise, checking blood pressure urinary protein testing and laboratory investigations. Hence, the cases of severe Pre-Eclampsia to be treated at the secondary or tertiary care only, where such facilities are available.

E. Training for the use of intramuscular magnesium sulphate for the emergency use in Eclampsia at primary and secondary care

The recommended loading dose for the prevention of fits in Eclampsia is intravenous; which needs dosage calculation and trained health personnel. The use of intramuscular loading dose of magnesium sulphate has recently shown similar efficacy and safety in a few small studies[x], however larger trials are needed for the routine recommendation of this regimen.

Majority of women deliver at home in Pakistan and may only reach a basic health facility where there may be no expertise to administer intravenous magnesium sulphate. WHO guidelines recommend the use of intramuscular dose if unable to give intravenous dose. Since an intramuscular dose can be easily administered by health workers in the primary care, which will prevent further fits in a woman referred to the tertiary care.

The use of an intramuscular loading dose is recommended before referral at the primary health care settings which will prevent fits and lower the mortality. Moreover, the cost of treatment is far less than the cost saving in terms of hospital stay, further treatment in tertiary care and the mortality cost.

F. Referral guidelines for primary and secondary care levels

Currently, a patient who develops fits and reaches a public or private health facility is either referred to a tertiary care hospital, without any initial treatment or is given anticonvulsants that are less effective for the emergency management of Eclampsia. This practice leads to higher mortality of the mothers as they have multiple fits on their way to the far off tertiary facilities and reach there either dead or in moribund condition.

Since severe Pre-Eclampsia and Eclampsia cannot have definitive treatment at primary and secondary care levels, they should be timely referred to the tertiary care facilities after administering the emergency loading dose of magnesium sulphate. Hence, there is a need to develop referral guidelines and processes for each level of care.

This can be a part of other referral guidelines already available with minimum cost implications.

At the primary care level we recommend emergency treatment (Loading dose of magnesium sulphate) for Eclampsia. Whereas, if there is a suspicion of severe Pre-Eclampsia at primary care, prompt referral is advised.

G. Training all the health workers in public and private sector

The training requirements at each level of care and for various cadres of health workers vary, which need to be specified according to the treatment guidelines. The training of health workers is recommended at all levels starting from high risk screening at the lady health worker level to definitive treatment at the tertiary care.

Private sector is an important stakeholder in the community and their training in administering the loading dose of magnesium sulphate is also recommended. The training of health workers has its cost implications, but the overall impact of saving every tenth mother's life is huge.

H. Engaging the pharmaceuticals to prepare pre-filled dosage vials of magnesium sulphate

The pharmaceutical industry can prepare Eclampsia packs with pre-filled dosage, supplies, instructions for use and an antidote. This will help in the easy administration and will dispel the fear in the health workers minds.

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