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CASE REPORT

Management of Severe Pre-eclampsia in Rural Bihar, India

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Abstract

Preeclampsia, a global cause of maternal and neonatal morbidity and mortality, has a disproportionate effect on low-resource areas such as rural areas in India. 22-year-old Primigravida Gaya Bihar. observed exophthalmia at 34 weeks of pregnancy before intake. Its clinical is described in this case study. representation, care, and results. The report emphasizes the challenges of remote provision. health care, the importance of immediate relocation and intervention, and structural issues that lead to. poor results for moms. This case's successful solution emphasizes how crucial honing is. community awareness to enhance relocation systems, lower the costs, and improve prenatal care (ANC). Preeclampsia prevalence in Bihar.

Keywords: Pre-Eclampsia, Prenatal care, ANC

INTRODUCTION

In particular, gestational hypertension affects 5–10% of pregnancies globally. preeclampsia [7]. The likelihood of adverse consequences for both mothers and children is significantly elevated by this

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condition. Babies are an expense that is disproportionately borne by lower- and middle-income nations [7]. For. For instance, compared to the national average, Bihar's maternal mortality ratio (MMR) is much higher. Shockingly, there are 149 deaths for every 100000 live births [2]. In India, it is responsible for around 15% of maternal fatalities. solely to preeclampsia [6,7]. poor prenatal care postponed transfers to more advanced medical care and. Remote places like Gaya in Bihar are especially difficult to reach because of limited access to specialized healthcare facilities. [3] susceptible. the story of a young woman going through her first period in rural Bihar. This case study looks at a pregnant woman who developed severe preeclampsia. Her case highlights the innate. systemic and clinical obstacles, as well as the critical importance of early detection and prompt intervention. and effective channels for referral in improving the health of mothers and their infants [3,7].

CASE PRESENTATION

Patient Profile

A 22-year-old primigravida, the patient resided in a rural village in the Gaya district of Bihar. When she. came to a tertiary care hospital in Patna at 34 weeks pregnant, having had one antenatal visit. ANC) visit at a local primary health care facility (PHC) at some stage of her pregnancy, and no. They found hypertension. According to the aide, the affected person had excessive hypertension [1]. Her blood pressure was 60/100 mmHg when she was admitted, but her breathing rate was 20 beats per minute. minute) as well as pulse rate (88 beats per minute) were within normal ranges. A gravid uterus consistent with 34 weeks of gestation and bilateral pitting pedal edema were located at some point of the physical exam [1].

Table no.1: Initial Clinical and Laboratory Findings with Interpretations in a Pregnant Patient with Severe Preeclampsia

Parameter	Finding	Interpretation
Blood Pressure	160/100 mmHg	Severe hypertension
Pulse Rate	88 beats/min	Within typical bounds
Breathing Rate	20 breaths/min	Within typical bounds

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Physical Exam	Bilateral pitting pedal edema; gravid uterus (34 weeks)	Signs of fluid overload; gestational age consistent
Urinalysis	3+ proteinuria	Significant proteinuria

Clinical parameters and their corresponding interpretations from a pregnant patient presenting with features of severe preeclampsia. Data are consistent with diagnostic criteria for the condition. [1,4]

Significant proteinuria (3+ on urinalysis), elevated serum creatinine (1 point 4 mg/dL), and increased liver enzymes (AST 80 U/L, ALT 90 U/L) were all found in laboratory tests, which suggested end-organ involvement [9]. Fetal ultrasound revealed no immediate fetal compromise and confirmed a viable fetus with normal growth parameters and an adequate volume of amniotic fluid. With evidence of multi-system involvement, these results collectively supported the diagnosis of severe preeclampsia [4].

Diagnosis

- The criteria of the American College of Obstetricians and Gynaecologists (ACOG) were used to diagnose severe preeclampsia. Blood pressure of at least 160/110 mmHg.
- Proteinuria (3+)
- Evidence of end-organ involvement (elevated liver enzymes, creatinine) [7].

MANAGEMENT

Initial Stabilization

The patient immediately began intravenous labetalol (20 mg bolus followed by a 10 mg/hour infusion) to control hypertension. To achieve the target blood pressure of 140/90 mmHg, two hours were required [10]. The World Health Organization's (WHO) recommendations for magnesium sulfate administration, a 4 g intravenous loading dose followed by a 1 g/hour maintenance dose, were followed to prevent eclamptic seizures [9,10]. Delivery. Due to the extreme preeclampsia and gestational age, an emergency cesarean section under spinal anaesthesia was required. A healthy male newborn weighing 2.2 kg was delivered, and at 1 minute and 5 minutes his Apgar scores were 8 and 9, respectively [7].

Postoperative Care

To control blood pressure after surgery, the patient was put on oral nifedipine (10 mg every 8 hours). for 24 hours while still taking magnesium sulfate. in the intensive care unit for 48 hours. She had no seizures or other issues while under intensive care unit (ICU) observation [7].

The baby was held in the neonatal intensive care unit (NICU) for twenty-four hours before being released.

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released in a steady state. The patient was discharged with a prescription on the fifth postoperative day. for antihypertensives and reminders to visit the hospital once a week [7].

DISCUSSION

Preeclampsia, a complex multisystem illness, remains a major cause of morbidity and mortality. mortality rates among mothers and babies, especially in resource-poor environments. The. Hypertensive disorders are a major contributing factor to Bihar's high maternal mortality ratio. of gestation [2 6]. Poor access to healthcare, low ANC utilization rates, and delayed problem identification all contribute to the burden [3].

CHALLENGES IN RURAL BIHAR

Limited Antenatal Care

Compared to the national average of 58 percent, only 36 percent of pregnant women in Bihar receive the recommended four ANC visits. In this instance, the patient had only gone to one ANC visit, and no hypertension was found there. This is a reflection of structural deficiencies in primary care screening and oversight [3].

Delayed Referral

The patient's delayed presentation to a tertiary care centre was likely due to several factors:

- **Geographic Barriers:** Long distances to tertiary hospitals
- **Resource Constraints:** Inadequate transportation and financial barriers
- **Healthcare Infrastructure:** PHCs often lack trained personnel and essential diagnostic tools (e.g., blood pressure monitors, urine dipsticks) [3,5].

Gaps in Primary Health Centres

In Bihar, many rural PHCs lack the basic tools and trained personnel needed for preeclampsia early detection. Negative consequences are more likely as a result, and chances for prompt intervention are lost [3,5].

Management Principles

Timely Intervention

The favorable outcome in this case was largely due to prompt referral and evidence-based management at a tertiary care facility. Key interventions included:

- **Antihypertensive Therapy:** Intravenous labetalol to achieve rapid blood pressure control
- **Seizure Prophylaxis:** Magnesium sulfate to prevent progression to eclampsia
- **Timely Delivery:** Emergency cesarean section to prevent maternal and fetal complications [5,6,7].

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MULTIDISCIPLINARY APPROACH

Anaesthesiologists, neonatologists, obstetricians, and nursing staff had to coordinate for management. Rural areas frequently lack this interdisciplinary approach, which emphasizes the necessity of system-wide improvement [7].

Systemic Solutions

Strengthening Antenatal Care

- **Training:** Regular training for ASHAs (Accredited Social Health Activists) and PHC staff to recognize early signs of preeclampsia
- **Equipment:** Ensuring availability of blood pressure monitors and urine dipsticks at all PHCs
- **Protocols:** Implementation of standardized screening protocols for hypertension and proteinuria [3,4,7]

Community Education

- **Awareness Campaigns:** Educating communities about the warning signs of preeclampsia and the importance of regular ANC visits
- **Engagement:** Involving community leaders and local health workers in promoting maternal health [7,9].

Lessons Learned

Preeclampsia can be identified early and potentially prevented with routine antenatal care (ANC) visits that include blood pressure monitoring and urinalysis.

Strong Referral Networks Are Crucial: Rapid and effective referral to specialized higher-level medical facilities with critical care and surgical capabilities is crucial in severe cases.

Enhancing the Healthcare System: To close current gaps in service delivery, it is essential to make investments in primary healthcare infrastructure, including staff training and the provision of essential equipment.

Empowering Communities: Delays in seeking care can be greatly decreased by educating women and their families about common pregnancy complications and the value of timely medical attention.

CONCLUSION

Severe preeclampsia is still a major problem in rural Bihar because of systemic problems with delayed prenatal care. Referrals and insufficient facilities for healthcare. This case illustrates the importance of prompt intervention. Such as the use of magnesium sulfate, an antihypertensive drug, and cesarean babies. Produce positive outcomes for the mother and the newborn even in high-risk circumstances. Health care system. Prioritizing the following will help reduce the burden of preeclampsia and related maternal conditions in Bihar. Morbidity and death rates. Making high-quality prenatal care and routine screenings available to everyone. For both

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hypertension and proteinuria is referred to as early detection. Sturdy Referral Mechanisms: Establishing effective, well-coordinated transport and referral networks. Community-Based Education: Educating people about the risks of pregnancy and the significance of seeking care as soon as possible. In Bihar and other low-resource settings, investing in these areas will not only help women with preeclampsia but also advance larger maternal and child health objectives.

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