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Management of high-risk pregnancies: The role of perinatal medicine in maternal-fetal medicine

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Abstract
Perinatal medicine presented as an important and specialized role in the care of high-risk pregnant women and their fetuses, which it enabled to our study to record the clinical outcomes of women and fetuses seen by the perinatal medicine service in hospitals in Baghdad, Iraq
Based on study design of methodology, clinical data were gathered with 74 high-risk mothers who were transferred to the hospitals in Baghdad, Iraq, during the period from February 2024 to February 2025, where patients included both perinatal interventions and maternal and neonatal outcomes, as well as it had enrolled into aged 33.6 ± 4.5 years.
Moreover, our study found that most common causes observed were hypertensive disorders during pregnancy, comprising 33.78% of the women, and placental abnormalities, comprising 16.22%, which a large proportion of the women had 79.73% underwent a cesarean section, as well as corticosteroids were the most commonly administered perinatal intervention, accounting for 59.5% of all participating women. Fetal monitoring using umbilical artery Doppler (UAD) was also performed, accounting for 79.7% of all fetuses, contributing to an improved survival rate of 93.24%, with a birth weight of 2584 ± 782 grams. This study notes that improved maternal and fetal outcomes for women with high-risk pregnancies result from the critical role of perinatal medicine and the intensive use of monitoring

Keywords: High-risk pregnancies, maternal-fetal medicine, perinatal medicine, admission to nicu, and cesarean section

Introduction
Obstetric risk is a classification that includes the clinical condition at the time of the start of prenatal care, the antecedents and other potential social risks, including the delayed start of prenatal care [1]. All of these, understood as indirect determinants that can affect the normal course of a pregnancy and childbirth. This is why it is necessary that prenatal care is of the best quality for the benefit of the pregnant woman and her child. Although most pregnancies and births go without complications, there are always potential risks [2]. Approximately 15% of all pregnant women manifest some life-threatening complication that requires qualified care and in some cases, an important obstetric intervention for the survival of the pair. High-risk pregnancy can be defined as one that presents certain factors that raise the possibility of an increase in maternal perinatal morbidity and mortality. [3]
These risk factors have an incidence of 20 to 30% and must be identified in a timely manner and managed effectively since these pregnancies contribute to 70 to 80% of maternal morbidity and mortality. Analyzing the circumstances in which maternal deaths occur, three delays are recognized, the first is the delay on the part of the woman and her family in recognizing that there is a serious problem, the second delay occurs when qualified care is not sought or accessed at the appropriate time and the third delay occurs in institutions when prompt and effective care is not provided. [4, 5, 6]
To reduce the possibility of the first and the second delay occurring, it is the duty of the entire health team to educate the community and young women and women of childbearing age in particular so that they know the risk factors that can threaten a happy pregnancy term and the importance of timely seeking care by qualified personnel; and it is the duty of the State to ensure the availability of a network of accessible and quality services to the entire population. An essential element to ensure quality care is to have up-to-date standards for the management of the main complications of pregnancy, childbirth and the puerperium

designed for a quick consultation classified by pathologies based on scientific evidence. [7, 8]

Patients and Methods

We conducted a cross-sectional study of 74 pregnant women with consecutive high-risk pregnancies who were admitted to an academic medical center in Baghdad, Iraq. They were treated and presented to the perinatal care service and followed up over a 12-month period, from January 2024 to January 2025. All maternal and fetal variables were recorded and modeled using SPSS version 24.0.

Additionally, only women who took part in the perinatal care survey were included in the medical records used for gathering significant details about the physical features of the high-risk pregnant patients. Ages, pre-pregnancy body mass index (BMI), and prior to pregnancy health problems identified among the demographic variables. In terms of the requirements for prenatal care, all women with high-risk pregnancy received medications including insulin, progesterone supplements, antihypertensives, and low-dose aspirin to avoid preeclampsia.

Using biophysical profiles (BPP), umbilical artery Doppler monitoring, appropriate antenatal corticosteroid, and magnesium sulfate neuroprotective therapy, all mothers at consecutive high-risk pregnancies received diagnostic and pharmacological interventions.

Pregnant women conformed to a plan offered by the medical facility on the treatment of both the mother and the fetus. This protocol established the type and time of monitoring along with intervention according to the high-risk condition that was discovered. Key medical results for both mothers and fetuses were assessed in relation to clinical outcomes recorded in the hospital by identifying and tracking all perinatal or postpartum complications, such as postpartum hemorrhage, blood transfusions, and transfers of both mothers and fetuses to the intensive care unit. All newborn statistics, such as birth weight and live birth status, were documented, as were all neonatal diagnoses in order to track the occurrence of additional diseases such proven sepsis, respiratory distress syndrome, and neonatal jaundice necessitating phototherapy.

Results

Table 1: The Clinical Findings of Maternals in Our Stufy

Variables	Number of Cases [74]	%
Ages of mothers [Y]	33.6 ± 4.5	
Body mass index of maternal in prior pregnancy {kg/m2}	29.2 ± 5.2	
Pregnancy type		
Primigravida	20	27.03
Multigravida	54	72.97
Comorbidity		
Pre-existing diabetes	8	(10.8%)
Chronic hypertension	11	(14.9%)
Primary indication for maternal-fetal medicine		
Hypertensive disorders (preeclampsia/gestational hypertension)	25	33.78
Abnormal placentation (previas/accreta spectrum)	12	16.22
Fetal growth restriction (fgr)	11	14.86
Recurrent pregnancy loss	5	6.76
Major fetal anomaly	4	5.41
Autoimmune disease (e.g., sle)	5	6.76
Cervical insufficiency	3	4.05
Multiple gestation	2	2.70
Other (cardiac disease, thyroid disorder, etc.)	7	9.46
Antenatal pharmacologic therapies		
Low-dose aspirin (for preeclampsia prophylaxis)	44	59.46
Antihypertensive medication	20	27.03
Progesterone supplementation	16	21.62
Insulin or oral hypoglycemics	13	17.57
Antenatal magnesium sulfate (for preeclampsia/eclampsia)	10	13.51

Table 2: Establishing Diagnostics Parameters Discovered in Our Study.

Items	**Cases**	**%**
Gestational age of maternal {weeks}		
Extremely Preterm (<28 weeks)	5	6.76
Very Preterm (28 to <32 weeks)	8	10.81
Moderate to Late Preterm (32 - <37 weeks)	20	27.03
Term (≥37 weeks)	41	55.41
Gestational Age at Delivery (weeks), [mean ± SD]	36.1 ± 3.2	
Mode of delivery		
Cesarean Section	59	79.73%
Elective	27	36.49%
Emergency	29	39.19%
Vaginal Delivery	14	18.92%

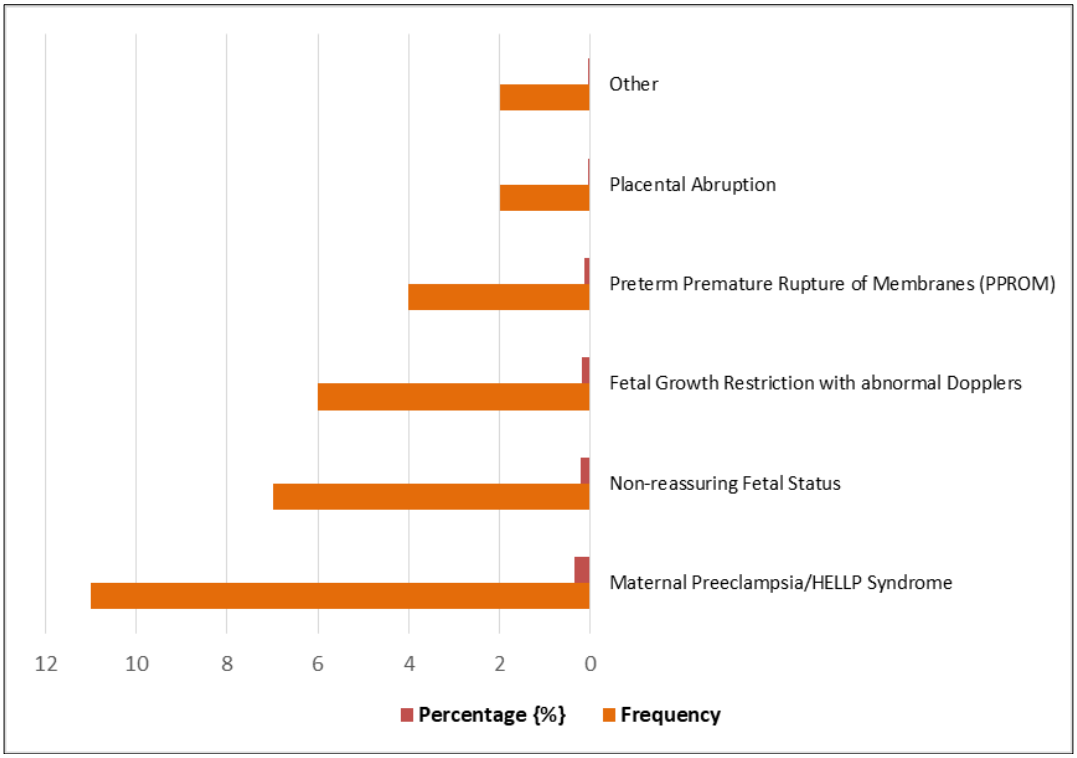

Fig 1: Identifying Main Signs Recorded of Preterm Delivery at Patients Who Less Than 37 Weeks.

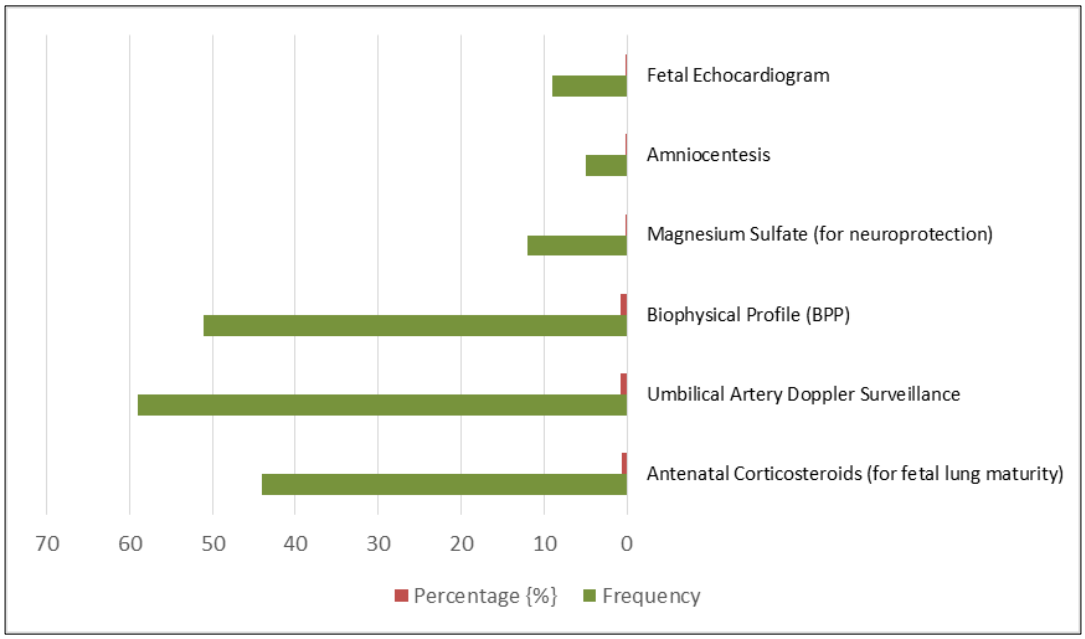

Fig 2: Determining Main Interventions and Monitoring Settled at the Maternal Perinatal.

Table 3: Maternal and Neonatal Outcomes in Postpartum.

Categories	Frequency	%
POSTPARTUM complications of mothers		
Postpartum Hemorrhage (>1000ml)	7	9.46
Blood Transfusion Required	6	8.11
Admission to ICU	2	2.70
Wound Infection	3	4.05
Thromboembolic Event	2	2.70
Total	**20**	**27.03**
POSTPARTUM Neonatal outcomes		
Live Births	69	93.24
Intrauterine Fetal Demise	3	4.05
Neonatal Death (within 28 days)	2	2.70
Birth Weight (grams)	**2584 ± 782**	
Low Birth Weight (<2500 g)	30	40.54
Very Low Birth Weight (<1500 g)	9	12.16

Table 4: Distribution Morbidity Detected Into Neonatal Live Births.

Parameters of neonatal morbidity	Frequency of 69 live births	%
Admission to NICU	33	47.83
Respiratory Distress Syndrome	20	28.99
Neonatal Jaundice requiring phototherapy	24	34.78
Suspected or Proven Sepsis	10	14.49
Intraventricular Hemorrhage (Grade III/IV)	4	5.80

Discussion

The results from this group of 74 pregnancies with elevated risks presented outcomes of the current issues and approaches to care in a specialist Maternal-Fetal Medicine (MFM) clinic. According to our investigation, the patient profile is defined by an elevated risk of comorbidities, particularly pre-existing diabetes (10.8%) and chronic hypertension (14.9%), as well as a mature mother's age (33.6 ± 4.5 years). Health care, especially outside of large conurbations, is facing enormous challenges in the world. In the health policy debates, the focus is often on the care of the aging population, whereas the challenges of young families have so far received little attention [9]. The transition from intrauterine to extrauterine life occurs without any problems for most newborns. However, some newborns require supportive, stabilizing measures during or after birth, with very few actually having to undergo resuscitation measures. Up to 85% of all newborns breathe spontaneously after birth without having to be supported, with a further 10% spontaneous breathing begins with drying and tactile stimulation. About 5% of all newborns need initial ventilation [10]. The rates of intubation after childbirth vary from 0.4 to 2%. Less than 0.3% of newborns require chest compressions, and only 0.05% need adrenaline administration. However, the current framework conditions of the Iraq health system, in combination with a shortage of skilled workers and a predicted decline in births, are increasingly making it difficult to maintain the high level of health care for families of children with medical care needs nationwide. The concept of value-based health care has been discussed for some time as an approach to meeting these challenges [11].

The high prevalence of low-dose aspirin use (59.46%) is in good agreement with worldwide guidelines that suggest commencing it to avoid preeclampsia in high-risk groups. Although hypertensive problems continued to be the predominant cause of preterm birth (34.4%), the elevated adherence rate probably contributed to reducing their severity. Additionally, the effective integration of groundbreaking clinical studies into routine practice is shown by the use of magnesium sulfate as neuroprotection in 16.2% of instances and prenatal corticosteroids in fetal lung maturation for 59.5% of cases. While the majority of pregnancies and births are inconspicuous and the children are born healthy, almost one in five newborns has to be hospitalized after birth: about half of them due to premature birth. A large number of the diseases have their origin already in the prenatal, intrauterine development. To prevent long-term effects of diseases of the fetus or fetus. In order to reduce the resulting significantly increased health costs for newborns, a cross-disciplinary, trans-sectoral safeguarding of regional care with a focus on feto-neonatal health is required. A reduced number of newborn children is forecast nationwide for the coming years. In the health sector, this is associated with a decrease in the number of sick-house cases and occupancy days for under 15-year-olds. For the individual regions, there are requirements for economic adjustments in pediatrics, but also the task of ensuring low infant mortality in the event of a falling birth rate. The care of high-risk pregnant women and newborns in a few centers leads to a significant improvement in the (over-) quality of life, but also requires an early transfer of patients to less specialized clinics. So far, this transfer has not always been possible, since the quality of treatment required for the special needs and thus the continuity of treatment cannot be guaranteed and the current financing system does not provide appropriate incentives. [12, 3, 6, 8, 9]

With the use of Biophysical Profiles in 68.9% of pregnancies and Umbilical Artery Doppler in 79.7%, respectively, our data show a high level of rigorous fetal surveillance. For the treatment of disorders such fetal growth restriction (FGR), who accounted for 18.8% of premature birth causes, this close observation is essential. An established method of timing delivery that weighs the hazards of preterm against those of ongoing fetal hypoxia is the employing of Doppler velocimetry to detect fetuses having placental insufficiency and aberrant hemodynamics. The substantial proportion of cesarean sections (79.73%), which are nearly equally elective and emergency. The concentration of at-risk births in large centers is accompanied by an improved quality of care for these children, but at the same time leads to a reduced expertise in the peripheral facilities and the potential risk of poorer care for sick children [13, 14, 15]. At the same time, the necessary obstetric or pediatric continuing education majors can no longer be offered; there is a risk of insufficient recruitment of young talent. Modern approaches to care include both intra- and trans-sectoral medical care for the child, as well as accompanying the whole family. The parents, as the main caregivers of the child, are responsible for his development from the very beginning and at the same time ensure the sustainability of medical care. To do this, they need advice, training and redundancy planning tailored to their needs, which can be provided in sufficient quality at centers, but not in the periphery. [16, 17, 18]

Conclusion

This study marks a significant milestone in exploring the importance of perinatal medicine in improving maternal and fetal outcomes after delivery. Using pharmacological treatments and monitoring during a 12-month follow-up period, the maternal and child health team achieved a live birth rate of 93.24% for mothers with high-risk pregnancies, particularly those with a high prevalence of preterm birth and cesarean delivery.

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