DIFFERENTIATED MANAGEMENT OF PREGNANCY WITH RESPECT TO PERINATAL RISK: A WAY OF REDUCING PERINATAL MORTALITY

by

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The search for means of further reduction in perinatal morbidity and mortality rates, and the improvement of physical and mental condition of newborn babies is a problem of major importance both in medical and social terms. Its solution largely depends on a timely and expert assessment of the pregnant woman's chances to maintain pregnancy, as well as the provision of optimum conditions for its successful development and the patient's good health.

The analysis of data reported in the literature and our own findings indicate that perinatal morbidity and mortality rates are particularly high in the "high-risk" group of pregnant patients. The high-risk group, which comprises no more than one-third of all pregnant patients, nevertheless accounts for two-thirds of all cases of perinatal loss.

The perinatal high risk of fetal disease during pregnancy can be defined as an increased danger of fetal and neonatal death or disease due to the effects of adversary maternal factors, as well as fetal disorders or abnormal development.

The "risk strategy" currently recommended in obstetrics and pediatrics consists in identifying and isolating risk factors, establishing their negative effects on the outcome of pregnancy, and choosing a strategy of individual specialized management of pregnancy.

As perinatal pathology is largely produced by the high-risk group of pregnant patients, it is imperative, in the first place, to identify this group and establish an intensive monitoring of the mother, fetus and newborn throughout pregnancy, labour and the neonatal period, with adequate treatment, where necessary. The reported data on pregnant patients distribution with respect to the degree of risk are presented in Table I.

The observed differences in the proportion of patients with given degrees of risk can be due to different methods of recording possible risk factors by different investigators, and also to the fact that some factors may be endemic to certain countries owing to specific climate and geographic features, local cultural traditions, customs and the social status of women.

The study of reported data, and the clinical experience accumulated in the All-Union Research Center for Maternal and Child Health, of the USSR Ministry of Health, as well as a multiaspect analysis of obstetric case histories with respect to possible causes of perinatal loss have pointed out some risk factors, the latter only including those factors which contributed to higher perinatal mortality rates than those observed in the entire cohort of patients studied. All the isolated risk

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TABLE I
Distribution of Pregnant Patients With Respect to Risk(%)

Authors	Date of publication	Degree of risk		
		High	Medium	Low
Nesbitt, Aubry	1969	30	36	34
Hickz	1972	20-25	48.5	31.5
Pecorari	1972	30	35	35
Zacutti	1972	16.9	33.5	49.4
Coppello	1974	22.4	38.5	39.1
Rzempoluch	1975	28	35	37

factors were divided into two major groups: prenatal (A) and intranatal (B) factors. Prenatal factors were further subdivided into 5 categories to make scoring easier: (1) social/biologic; (2) obstetric/gynaecologic history; (3) extragenital disease; (4) complications of current pregnancy; (5) low assessment of intrauterine fetal condition. There were 52 prenatal factors altogether. Intranatal factors were also subdivided into 3 categories: (1) maternal factors; (2) placental and umbilical factors; (3) fetal factors. This group therefore only comprised 20 factors, making the total of 72 risk factors.

Risk factors were assessed quantitatively, making use of a scoring system that enabled an assessment of risk for each individual factor as well as the summary risk for all the isolated factors taken together. The total perinatal mortality for all deliveries in the group was expressed as Score 1. Assuming this, the scoring of each risk factor was based on the computation of the perinatal mortality rate for the total number of deliveries and for the cases with at least one of the above-listed factors.

According to our principle of risk evaluation, the probability of unfavourable outcome of pregnancy and labour for the fetus and the newborn was defined as high, medium or low, while every one of these latter degrees was assessed using the Apgar score and the perinatal mortality rate. Patients with the total score of 10 and above were referred to the high-risk group. those scoring 5 to 9 points made up the medium-risk group, while patients who scored 4 or less belonged to the low-risk group.

The results of delivery outcomes, as reported in selective analyses of records from women's consulting centers, suggest that the low-risk group is constituted by 45% of pregnant women, the medium-risk group, by 28.6%, and the high-risk group, by 26.4%. It should be noted that perinatal mortality rates in the said groups differed significantly: in the high-risk group, the rate was 20 times as high as that of the low-risk group, and 3.5 times as high as that of the medium-risk group, 64.1%, 19.7%, and 3.3%, respectively.

First screening of pregnant patients (before 12 weeks of pregnancy) showed that 18 per cent of women qualified for the high-risk group, whereas nearer the term of delivery, i.e. at 32 to 38 weeks, the number to be referred to this group reached 26.4 per cent. During labour, the pattern of risk distribution was as follows: low risk—42.8 per cent, medium-risk—30 per cent, high-risk—27.2 per cent, while the perinatal mortality rates were 1.4, 20 and 65.2%, respectively.

Our findings provide an evidence that, as pregnancy progresses, the low-risk group gradually decreases in number, while, on the contrary, the number of patients to be referred to the medium and high risk groups goes up. As the degree of risk increases, so does the perinatal mortality rate. The analysis of the latter suggests that an intranatal risk factor has a more pronounced immediate effect on the perinatal mortality rate than antenatal risk factors may have, as evidenced by the statistically significant difference between perinatal mortality rates in the high-risk and low-risk groups of patients with respect to prenatal and intranatal factors.

The risk factors isolated and assessed according to the abovementioned procedure formed the basis for a system of intensive monitoring for high-risk patients in the conditions of a maternity consulting center. Initial screenings before 12 weeks of pregnancy identified high-risk patients who were subjected to a specialized thorough investigation and, following a consultation with an internist, it was decided whether the pregnancy should be terminated or not. Special attention was given to pregnant women with a history of stillbirths, neonatal death, deliveries of children with neurologic defects, habitual abortions, genital malformations, severe extragenital disease. Couples aged 40 and over, and/or having children with malformations were referred for genetic counselling.

A rationalized individual plan of management was developed for every patient, which included both the monitoring of the patient's condition and specialized techniques of fetal investigation. For example, up to 16 weeks of pregnancy, urinary HCG assays were performed weekly, altrasonic scanning was done repeatedly to assess dynamic parameters of fetal growth (fetal biparietal diameter, placental localization and thickness, etc.) and make a more accurate estimation of the term of pregnancy. In cases of threatened abortion, uterine contractility was tested for an early diagnosis of increased excitability of the uterus. Whenever necessary, patients were referred to clinical departmnts of pathologic pregnancy for further intensive monitoring and treatment. A repeated screening was done on an outpatient basis at 36 to 38 weeks of pregnancy, whereupon the method of further management was chosen, and the date and place of delivery were determined. In labour, high-risk parturients were subjected to continuous monitoring. The newborns of high-risk mothers, especially those combining prenatal and intranatal high-risk factors, were subject to specialized pediatric follow-up throughout their neonatal life.

Specialized intensive monitoring of a high-risk group of pregnant women with the history of stillbirths reduced the rate of perintal mortality by 30 per cent, as compared to a similar group, where intensive monitoring was not conducted.

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