DIABETES IN PREGNANCY. AN EPIDEMIOLOGIC STUDY BY DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY OF SASSARI UNIVERSITY FROM 1974 TO 1983

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Summary: We examined 102 pregnancies in 59 diabetic women by Department of Gynaecology and Obstetrics of Sassari University from 1974 to 1983, we evaluated pregnancy and labor proceeding, perinative morbility and mortality. Our issues show a perinative mortality high yet (14.8%), not always comparable to severy of maternal diabetes, that's mainly due to insufficient number of controls undertaken from patients for their por medical education. Recently diabetic pregnant women have getting used to routine controls of metabolic balance, pregnancy evolution and fetal well-being through biochemical and biophysic monitoring; that allows to obtain an improvement of perinative mortality.

In recent years control and management of diabetic pregnant underwent an important development. The new therapeutic views allows a development of diabetic women's gestation comparable with the mostly normal pregnancies, though the perinative mortality still remains comparatively high (3 to 10%) ([1, 2]).

We evaluated the pregnancy and labor proceeding, perinative mortality and morbility in the diabetic patients of our Hospital in the last ten years.

MATERIAL AND METHODS

We examined 102 pregnancies in 59 diabetic women for the years 1974-1983.

The age of the patients was between 17-46 years (60% were younger than 30 years), the mostly being pluriparas (63%).

11 cases presented a case-history of infertility (abortions or intrauterine fetal deaths).

We classified all the patients by White's classification ([2, 3, 4]). In this study we considered pregnancy development, the labor accomplishment modes, the mother-morbidity, perinative mortality and morbidity, relating them to severity of diabetes.

Several antidiabetic centers performed glycemic controls. Fetal well-being evolution was performed during pregnancy by biochemical monitoring in a small number of patients only in the last five years.

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RESULTS

Regarding pregnancy evolument; 9 spontaneous abortions, with 19 volontary pregnancy interruption (4 in the same patients), 81 deliveries, mostly (71.5%) from 37th to 40th weeks of gestation, and 7 endouterine fetal deaths (within 29th to 39th gestation weeks) occurred (table 1).

Cesarian sections were performed in 35 (43.2%), vacuum extractor applications in 7 (8.6%) cases. Whereas 39 spontaneous deliveries occurrent (48.1%). Different obstetric pathologies were indications to C.S. and in 7 cases there was an elective operation (fig. 1).

In 9.3% of cases neonates presented weights lower to 10th percentile of Lubchenko curve, and in 45.9% upper to 90th percentile, till at maximum of 5,600 g.

As for white's classification, into class A two endouterine death (39th-41th weeks of gestation), one abortion and 20 deliveries (14 of which were spontaneous, 2

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Table 1. — *White's classes and pregnancy development (from 1974 to 1983).*

White's class	Delivery			Abortions	Volontary pregnancy interruption
	SD	VE	CS		
A	14	2	4	1	—
B	9	1	10	2	7
C	11	3	14	6	11
D	5	1	4	—	1
E	—	—	—	—	—
F	—	—	3	—	—
R	—	—	—	—	—

by V.E. and 4 by C.S.) occurred. In class B we found 3 endouterine deaths (35th - 37th - 39th week respectively), 2 abortions and 20 deliveries (9 of which were spontaneous, 1 by V.E. and 10 by C.S.) with 2 early neonatal deaths. In class C we had one endouterine death (20th week), 6 abortions and 28 deliveries (11 of which were spontaneous, 3 by V.E., 14 by C.S.) and one early newborn death. In class D we also found one endouterine death (34th week), 10 deliveries (5 spontaneous, 1 by V.E., 4 by C.S.) with 2 newborn death cases during the first life-week. Lastly, the 3 pregnancies included in class F were taken until fetal riability age and accomplished by C.S.

All the E F D occurred before hospital admission, excepted one intrapartum death which happened at the 37th week and was included in class B.

With reference to neonatal morbidity we found hypoglycaemia in 26 cases, hypocalcemia in 6, jaline membranes desease in 5, fetal circle persistence in 2, immaturity and prematurity in 3 and icterus in 22 cases.

Concerning neonatal mortality, 5 newborns died during the first life week, 4 for jaline membranes desease and one for prematurity and immaturity (27th week).

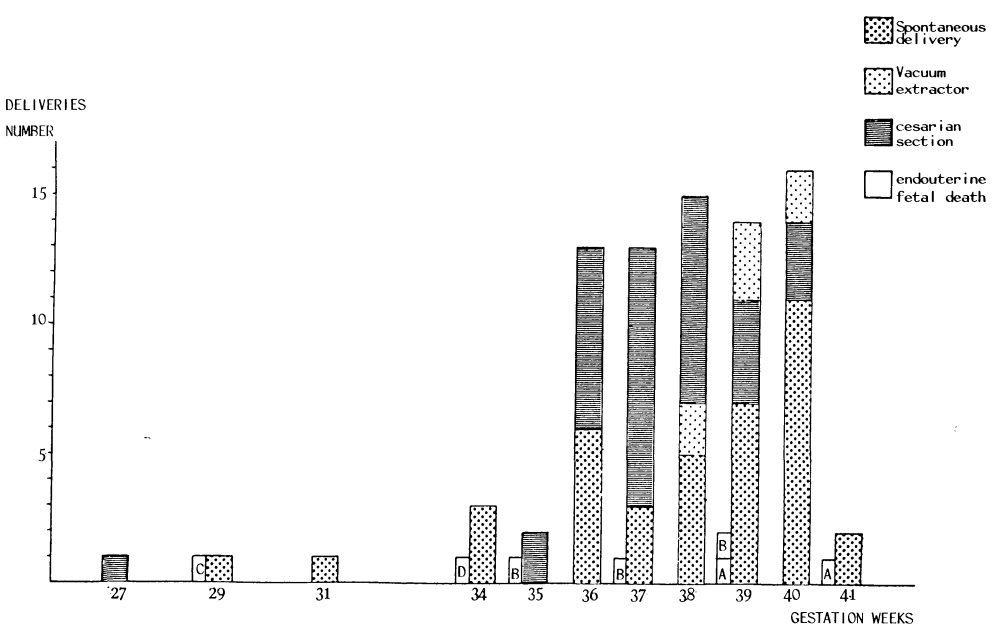

Fig. 1. — Pregnancy evolution and labor accomplishment modes.

Table 2. — *White's classes and perinative mortality.*

White's class	Lively neonates	Endouterine fetal death	Death in first life week	Perinative mortality ‰
A	18	2	—	100
B	17	3	2	250
C	27	1	1	71
D	9	1	2	300
F	3	—	—	—
Total	74	7	5	148

DISCUSSION - CONCLUSIONS

From analysis of our cases we first notice, according to reports of other Authors ([5, 6]), the high fetal macrosomia incidence (45.9%) independent from maternal disease length and severity, and instead related to metabolic balance.

Regarding perinative mortality this totalled 14.8% with a notable difference if compared to the latest data of literature, reporting incidences ranging from 2.7 to 5% ([7, 8, 9]).

Fetal deaths occurred in non-hospitalized women from 29th to 41st gestation weeks, excepted one intrapartum death attributable to insufficient cheeking of maternal metabolism and fetal well-being during pregnancy ([10, 11, 12]).

The perinative mortality incidences related to White's classes (tab. 2) emphasise a mortality rate not always proportional to maternal diabetic severity, with numerous perinative deaths also in class A and B: that is probably due to an insufficient number of controls undertaken by patients, if we consider that among our cases no fewer than 5 diabetes of class A were diagnosed only at the admission for delivery accomplishment.

In conclusion our observations in the last ten years also follow frequent situations of high mother-fetus risk which we had to face mostly in labor proximity, resulting from inadequate metabolic controls but especially from an insufficient number of obstetric, biochemical and biophysic controls performed during pregnancy, mainly due to the poor medical education of these patients.

Only in the last three years diabetic pregnant women have been getting used to routine controls of metabolic balance, pregnancy evolution and fetal well-being through biochemical and biophysic monitoring.

Many difficulties remain for those patients dispersed in extraurban areas, having insufficient comunications with diagnostic Centres where control and management protocols are carried out.

In these specialized Centers, where these patients may be continuously and appropriately followed, especially by a pluridisciplinary close checking (with active cooperation among obstetricians, pediatrists and diabetolysts), it is possible to achieve striking results allowing an improvement of perinative mortality.

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