IUGR FETAL SURVEILLANCE DURING LABOR WITH SIMULTANEOUS CARDIOTOCOGRAPHY AND PULSE OXIMETRY

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Objective: 1) to define the limit of pre-acidemia and acidemia of IUGR (intrauterine growth retarded) fetuses during labor through combined cardiotocography and fetal pulse oximetry, in order to select the ideal way of delivery. 2) to evaluate the reliability of pulse oximetry as a non-invasive method of fetal surveillance.

Study design: A prospective study. We studied 10 IUGR fetuses and a control group of 15 AGA (appropriate for gestational age) fetuses during labor. Both groups had abnormal FHR tracings and were monitored throughout labor with cardiotocography combined with fetal pulse oximetry. After delivery, the Apgar scores at 1 and 5 minutes were recorded and blood samples were obtained from the umbilical artery to determine fetal blood pH.

Setting: The Fetal Surveillance Unit of the 2nd Department of Obstetrics and Gynecology, Aretaieion Hospital, Athens University.

Results: Our results are presented in the following table:

n	fetuses	SpO_{2} %	1'Apgar	5'Apgar	Artery pH
6	IUGR	30-34	4-5	< 7	7.10-7.15
4	IUGR	35-39	6-7	7	7.15-7.20
2	AGA	< 30	5-6	7	7.10-7.15
5	AGA	30-35	6-7	> 7	7.15-7.20
8	AGA	> 35			> 7.20

Conclusions: In IUGR fetuses $FspO_{2}$ values between 30-34% represent acidotic status and 35-39% are pre-acidotic. Fetal pulse oximetry was proved reliable, according to umbilical cord blood measurements and Apgar scores.