

284 PERINATAL OUTCOME OF MACROSOMIC FETUSES ACCORDING TO THE MODE OF DELIVERY LUIGI RAIÒ¹, FABIO GHEZZI², EDOARDO DI NARO³, MASSIMO FRANCHI², MARCO BUTTARELLI², FRISCILLA MANTEGAZZA², HERMAN BRUHWILER⁴, HENNING SCHNEIDER⁵; ¹University of Bern, Bern; ²University of Insubria, Obstetrics and Gynecology, Varese; ³University of Bari, Obstetrics or Gynecology, Bari; ⁴Kantonsspital Munsterlingen, Obstetrics and Gynecology, Munsterlingen; ⁵University of Bern, Obstetrics and Gynecology, Bern

OBJECTIVE: To determine the prevalence of severe neonatal complications in healthy term macrosomic infants according to the mode of the delivery.

STUDY DESIGN: Using the database of the Swiss Obstetric study group (AFS), perinatal information of 284,641 women who delivered during a 10-year period were analyzed. After the exclusion of cases with factors that may have affected the health of the neonate, patient characteristics of macrosomic infants (>4500 gr) delivered vaginally were compared to those of infants delivered by cesarean section (CS).

RESULTS: During the study period, 3356 macrosomic fetuses in vertex presentation were registered in the database. Of these, 2639 were delivered vaginally (group 1) and 717 were delivered by CS (group 2). In comparison to group 2, group 1 had a higher rate of brachial plexus injuries (3.6% vs 0%, $P < .001$) and clavicle fracture (4% vs 0.3% $P < .001$). Although not significant, the proportion of intra- and postpartum neonatal mortality was higher in group 1 than in group 2 (9 cases vs 0 cases). To demonstrate such a difference [power 80%, ($\alpha = 0.05$)] 6700 cases would be necessary. The 9 cases of neonatal mortality did not occur in diabetic mothers. No difference was present between groups in admission to NICU or long term O₂ administration. In group 1, 310 cases (group 1a) of shoulder dystocia occurred. Of these, 58 fetuses had brachial plexus injuries. In comparison to patients in group 1 who did not have shoulder dystocia (group 1b), the proportions of birth weight >4750 gr, patient's height <166 cm, diabetes, gestational diabetes, clavicle fracture, and operative delivery were higher in group 1a. After adjustment for confounding variable, patient's height (OR = 1.9), diabetes (OR = 3.3), and birthweight (OR = 2.1) remained a predictor ($P < .05$) of shoulder dystocia.

CONCLUSION: Since some of these risk factors are known prior to delivery, patients whose fetus weight is suspected to be greater than 4750 gr should be counseled on the higher risks of vaginal delivery.

286 MATERNAL MORTALITY AT AN INNER-CITY HOSPITAL, 1949-2000 ELEANOR HO¹, JO-ANN BROWN², WILLIAM GRAVES³, MICHAEL LIND-SAY⁴; ¹Emory University, Gynecology and Obstetrics, Atlanta, GA; ²Grady Memorial Hospital, Atlanta, GA; ³Emory University, Gynecology & Obstetrics, Atlanta, GA; ⁴Emory University, Atlanta, GA

OBJECTIVE: To determine the rates and causes of maternal deaths at an inner-city hospital from 1949 through 2000.

STUDY DESIGN: All maternal deaths recorded at the hospital occurring from January 1949 through December 2000 were included. Death summaries and autopsy reports were reviewed. Mortality rates and causes of death were compared for the periods 1949-1971 and 1972-2000. The chi-square test was used to test the relationship between time, classification and cause of death.

RESULTS: During the study period, 290 maternal deaths and 314,436 live births were recorded, for a maternal mortality rate of 92.2 per 100,000. There was an increase in the percentage of deaths indirectly related to pregnancy and unrelated to pregnancy and a decrease in the percentage of deaths directly related to pregnancy ($P < .05$). This is attributable to a decrease in deaths from obstetrical infections and hemorrhage and an increase in deaths from non-obstetrical infections, vascular disease and homicide ($P < .05$).

CONCLUSION: The major causes of maternal mortality in our hospital have changed. Better understanding of these causes may lead to more effective prevention efforts.

Table

Maternal mortality rates

STUDY PERIOD	MATERNAL DEATHS	LIVE BIRTHS	MORTALITY RATE PER 100,000
1949-1971	165	143,377	115.1
1972-2000	125	171,059	73.1
1949-2000	290	314,436	92.2

Maternal mortalities by classification

CLASSIFICATION OF DEATH	1949-1971 (N = 165)	1972-2000 (N = 125)	P VALUE
Direct	101 (61%)	45 (35%)	<.001
Indirect	31 (19%)	32 (25%)	
Unrelated	29 (18%)	51 (40%)	

Maternal mortalities by cause

CAUSE OF DEATH	1949-1971 (N = 165)	1972-2000 (N = 125)	P VALUE
Infection	36 (22%)	7 (6%)	<.001
Hemorrhage	21 (13%)	8 (6%)	
Preeclampsia	21 (13%)	16 (13%)	
Non-obstetric infections	3 (2%)	10 (8%)	
Vascular disease	1 (<1%)	12 (10%)	
Homicide	3 (2%)	15 (12%)	

285 THE IMPACT OF MULTIPLE GESTATION ON NICU ADMISSION AND LENGTH OF STAY IN WOMEN WITH PRETERM LABOR AND DELIVERY JOHN R. BARTON¹, JOHN O'BRIEN¹, DOUGLAS MILLIGAN¹, DEBBIE JACQUES², NIKI ISTWAN², BAHÁ SIBAI³; ¹Perinatal Diagnostic Center, Lexington, KY; ²Matria Healthcare, Clinical Research Dept., Marietta, GA; ³University of Cincinnati, Dept. of Ob/Gyn, Cincinnati, OH

OBJECTIVE: To compare the rate of NICU admission (ADM) and length of stay (LOS) among infants of singleton, twin, and triplet gestations stratified by gestational age (GA) at delivery.

STUDY DESIGN: 9415 infants of singleton, twin, and triplet pregnancies with delivery weeks 33-36 (triplet vs. twin infants, common odds ratio 2.5, 95% confidence interval 2.0, 3.1; twin vs. singleton 1.5 [1.4, 1.7]). Rate of NICU admission and LOS (mean \pm SD) stratified by GA at delivery are presented in the Table below.

RESULTS: Odds of NICU ADM increased significantly with fetal number for delivery weeks 33-36 (triplet vs. twin infants, common odds ratio 2.5, 95% confidence interval 2.0, 3.1; twin vs. singleton 1.5 [1.4, 1.7]). Rate of NICU admission and LOS (mean \pm SD) stratified by GA at delivery are presented in the Table below.

CONCLUSION: The risk of NICU ADM increases significantly with fetal number, for each week of delivery (33-36). Each additional infant in utero also results in significantly longer NICU LOS.

Table

	SINGLETON	TWIN	TRIPLET	P VALUE
NICU 31w	93.0%	94.3%	98.0%	.108
LOS, d	24.9 \pm 13.3	26.6 \pm 10.8	29.1 \pm 14.2	<.001
NICU 32w	88.5%	92.5%	94.6%	.038
LOS, d	18.3 \pm 12.1	20.0 \pm 10.0	22.9 \pm 10.3	<.001
NICU 33w	77.8%	85.5%	94.6%	<.001
LOS, d	13.5 \pm 11.5	14.8 \pm 8.1	15.2 \pm 7.4	<.001
NICU 34w	57.5%	69.5%	83.8%	<.001
LOS, d	8.8 \pm 7.3	10.4 \pm 6.3	11.6 \pm 7.0	<.001
NICU 35w	28.9%	39.6%	59.7%	<.001
LOS, d	7.7 \pm 8.6	8.7 \pm 9.2	9.3 \pm 10.3	<.001
NICU 36w	16.0%	20.4%	43.1%	<.001
LOS, d	6.5 \pm 7.6	7.3 \pm 8.0	10.3 \pm 20.2	.007

287 ULTRASOUND MEASURED CERVICAL LENGTH, (UMCL) IS INVERSELY ASSOCIATED WITH MATERNAL HEIGHT MELISSA SWAIN¹, NICHHD MFMU Network, Bethesda, MD

OBJECTIVE: Previous results from the NICHD MFMU Network Preterm Prediction Study, (Goldenberg et al) found an association of UMCL with maternal body mass index (BMI) at 22 weeks gestation. We performed this analysis to evaluate relationships between maternal body size (height, weight, BMI) and UMCL at an earlier gestational age.

STUDY DESIGN: In a multicenter, blinded observational study, 147 women with a history of a prior spontaneous preterm delivery (<32 weeks gestation) were studied biweekly beginning at 16 weeks gestation using transvaginal ultrasound. A sample of ultrasounds was read centrally for the purpose of this analysis, the initial measurement of cervical length was used. The association of cervical length with maternal height, weight, and BMI was examined using linear regression analysis.

RESULTS: No significant relationship existed in these women between cervical length and maternal weight or BMI. A trend for an inverse relationship was present between maternal height and cervical length. This relationship was statistically significant for non African-American women, ($\beta = -0.308 P = .009$).

CONCLUSION: Shorter maternal height tended to be associated with longer cervical length, when measured at 16 weeks gestation. If further studies of high risk and low risk parturients confirm these preliminary data, standard criteria for evaluating UMCL may need to adjust for maternal height.

Table

Analysis variable: Cervical length

AFRICAN AMERICAN	HEIGHT (CM)	N	MEAN (MM)	STD DEV
No	<160	30	38.70	7.38
	160+	23	33.57	5.90
Yes	<160	26	33.58	10.61
	160+	68	33.29	9.12