

Causes of stillbirth in Emilia-Romagna: a prospective cohort study

Beatrice Melis^{*}, Cristina Salerno, Daniela Menichini, Gloria Guariglia, Fabio Facchinetti, Francesca Monari

Obstetrics and Gynecology Unit, Mother-Infant and Adult Department of Medical and Surgical Sciences, University of Modena and Reggio Emilia, Modena, Italy.

DOI: 10.36129/jog.2022.S100

Objective. This study aims to assess the frequency of Stillbirth (SB) causes, in preterm and term pregnancy. Their identification could help to reduce SB rates and improve perinatal outcomes in subsequent pregnancies.

Materials and Methods. We conducted a prospective cohort study in Emilia-Romagna. For each SB (≥ 22 weeks of gestation or ≥ 500 g) between January 2014 to June 2021 ($n = 854$), the same diagnostic workup was performed and a clinical record was completed. Causes of perinatal death were classified according to a modified ReCoDe classification in eight subgroups (**Table 1**), then subdivided in early preterm, late preterm and at term SB.

Results. Out of 854 SB, 601 (70.4%) occurred preterm, 253 (29.6%) at term. Total SB rate was 3.6 per 1000 births

(854/232.907). Overall, placental pathology (31.4%), fetal pathology (16.3%) and unexplained causes (21.4%) were the most represented causes. Placental pathology and fetal pathology were more frequent in preterm groups, while infections were more frequent in the early preterm group. Umbilical cord accidents were higher at term *versus* both preterm groups. Finally, unexplained stillbirth had a significant rise at term (**Table 1**). Moreover, late IUGR were significantly represented in SB at term ($n = 13$, 5%).

Conclusions. Placental pathology is the principal cause in every group while maternal disorders are less impacting, possibly due to antenatal care. However, fetal pathology at term is still incident, namely for suboptimal diagnosis/management of late IUGR fetuses. One in four of term SB remains unexplained.

Table 1. Causes of death according to gestational age classes (<32 weeks, 33-36 weeks, >37 weeks).

Causes of death	GA ≤ 32 (N=401)	GA 33-36 (N=200)	GA ≥ 37 (N=253)	P value
Fetal pathology	72 (17.9)	43 (21.5)	24 (9.5)	<0.001
Umbilical cord accidents	30 (7.5)	25 (12.5)	56 (22.1)	<0.001
Placental pathology	131 (32.7)	77 (38.5)	60 (23.7)	0.003
Unexplained	77 (19.2)	37 (18.5)	69 (27.3)	0.03
Infections	52 (13.0)	10 (5.0)	23 (9.1)	0.008
Maternal disorders	24 (6.0)	5 (2.5)	9 (3.6)	0.10
Intrapartum asphyxia	9 (2.2)	0	5 (1.9)	0.11
Others	6 (1.5)	3 (1.5)	7 (2.7)	0.46