

Gynaecology and Obstetrics Clinic, University Clinical Centre of Kosovo, Prishtina

PERINATAL AND MATERNAL MORTALITY IN KOSOVO IN THE YEAR 2005

PERINATALNI I MATERNALNI MORTALITET U KOSOVU 2005. GODINE

*Shefqet Lulaj, Suheda Hoxha-Latifi, Mentor Kotori, Sejdullah Hoxha,
Agron Gashi, Shpend Ramadani, Mynavere Hoxha, Selim Kolgeci*

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SUMMARY. During 2005, 29.056 births were registered in Kosova, taking into consideration all the newborn infants with the body weight ≥ 500 g. From these, 13.9% were delivered by Caesarean Section, the 6.6% had a body weight < 2500 g. Perinatal death rate is 22.8‰ (672), fetal mortality 13.2‰ and early neonatal mortality 9.7‰. At newborn infants with BW ≥ 1000 g perinatal mortality is 17.4‰ (fetal mortality 10.2‰ and early neonatal mortality 7.2‰). During 2005 two maternal deaths were registered, which corresponds to the maternal mortality rate of 6.8/100.000. The most common causes of fetal deaths of 256 (with known clinical cause) from 390 stillborns are as follows: complications during pregnancy 46%, asphyxia at birth 14.8%, congenital anomalies 9.7%, infections 2.3% and in 27.7% the cause of death remains unknown. With regard to the causes of the early neonatal deaths, prematurity dominates with 54%, congenital anomalies with 24%, other perinatal causes with 12%, infections 5%, asphyxia 4% and other causes with 1%.

Stručni članak

Ključne riječi: perinatalni mortalitet, maternalni mortalitet, uzroci

SAŽETAK. Tijekom 2005, na Kosovu je bilo 29.056 poroda, uzimajući u obzir svu novorođenčad s tjelesnom težinom ≥ 500 grama. Od ovog broja 13,9% je porođeno carskim rezom, a 6,6% je imalo tjelesnu težinu < 2500 g. Perinatalni mortalitet je 22,8‰ (672), fetalni mortalitet čini 13,2‰ a rani neonatalni mortalitet 9,7‰. U novorodjenčadi s tjelesnom težinom ≥ 1000 g perinatalni mortalitet je 17,4‰ (fetalni 10,2‰, rani neonatalni 7,2‰). Tijekom 2005. zabilježena su dva slučaja maternalnog mortaliteta (6,8/100.000). Najčešći uzroci fetalnog mortaliteta u 256 od 390 mrtvorodjene djece (s poznatim kliničkim uzrocima) su: komplikacije tijekom trudnoće 46%, asfiksija pri porodu 14,8%, prirodjene anomalije ploda 9,7%, infekcije 2,3%, dok u 27,7% razlog smrti je nepoznat. Uzroci ranog neonatalnog mortaliteta su: nedošečnost 54%, prirodjene anomalije 24%, ostali perinatalni uzroci 12%, infekcije 5%, asfiksija 4%, ostali razlozi 1%.

Introduction

Perinatal mortality. For purposes of national evaluation were included all infant deaths in perinatal period [fetal mortality (FM) and early neonatal mortality (ENM)] with body weight ≥ 500 g, ≥ 22 gestational weeks (GW) or ≥ 25 cm length; for international comparison, all those with body weight ≥ 1000 g, ≥ 28 GW or ≥ 35 cm length.

All over the world, 7.5 million children die every year in their perinatal period (perinatal mortality rate is 53‰), of them 3,3 million are stillbirths (FM rate 23.3‰) while 4,2 million die in the early neonatal period (ENM rate 29,7‰).^{1,2} Of all perinatal deaths 97% are registered in developing countries, even though sub registration phenomenon is often present. In global terms, perinatal mortality is classified in the following categories: $\leq 10\%$, from 10–80‰, and $\geq 80\%$.³

In USA perinatal mortality rate in 2001 was 6,9‰ (FM – 3,3‰ and NM – 3,6‰).⁴ Perinatal mortality in Nordic countries in 2002 was $< 5\%$, while in central Asian republics around 13%.⁵ While in developing countries perinatal mortality is very high, in developed countries it has declined to the lowest theoretical levels of $< 4,9\%$.⁶ Based on the data for of the year 2000, the

highest perinatal mortality rate is in Africa, (99‰), while in Asia and Latin America it fluctuates between 28 – 99‰.²

In European countries,⁵ Russian Federation has the highest fetal mortality rate of 6.4‰, while Czech Republic has the lowest rate of only 2.8‰.

Early neonatal mortality rate for year 2002 is the highest in Russian Federation, around 6,1‰, and the lowest in Scandinavian countries, around 1,7‰. Russian Federation has the highest perinatal mortality rate, 10,97‰ while Austria and Finland the lowest one 3,4‰.⁵

To the perinatal mortality contribute the children born before the 37th GW or with BW of < 2500 g, those with congenital anomalies, asphyxia, traumas during birth, perinatal infections, disorders caused by complications during pregnancy and other causes. Indirect contributory causes of perinatal mortality are: socio-economic status, gender of the newborn, familiar status, smoking, mother's age, multiple pregnancy, quality and availability of perinatal care.³

Worldwide, maternal mortality rate, in 2000 was 400/100.000, in developed countries 20/100.000, in developing countries 440/100.000; highest mortality rate is in sub-Saharan Africa (920/100.000) and in South-central

Table 1. Maternal mortality as calculated by UN MDG, 2000
 Tablica 1. Maternalna smrtnost kalkulirana je po UN MDG, 2000.

Region	Maternal mortality ratio (maternal deaths per 100,000 live births)	Number of maternal deaths	Lifetime risk of maternal death, 1 in:
WORLD TOTAL	400	529,000	74
DEVELOPED REGIONS*	20	2,500	2,8
Europe	24	1,700	2,4
DEVELOPING REGIONS	440	527,000	61
Africa	830	251,000	20
Northern Africa**	130	4,600	210
Sub-Saharan Africa	920	247,000	16
Asia	330	253,000	94
Eastern Asia	55	11,000	840
South-central Asia	520	207,000	46
South-eastern Asia	210	25,000	140
Western Asia	190	9,800	120
Latin America and the Caribbean	190	22,000	160
Oceania	240	530	83

* Includes, in addition to Europe, Canada, the United States of America, Japan, Australia and New Zeland, which are excluded from the regional totals.

** Excludes Sudan, which is included in sub-Saharan Africa

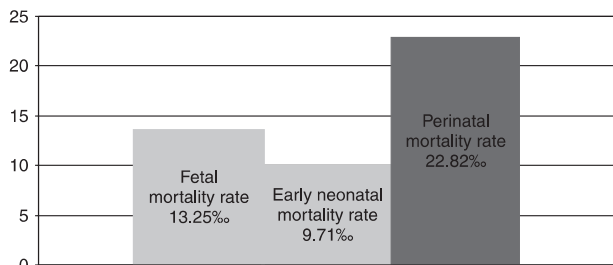


Figure 1. Rate of fetal, early neonatal and perinatal mortality in Kosovo in 2005. Infants body weight ≥500 grams.

Slika 1. Stope fetalne, rane neonatalne i perinatalne smrtnosti na Kosovu, 2005. Djeca tjelesne težine ≥500 grama.

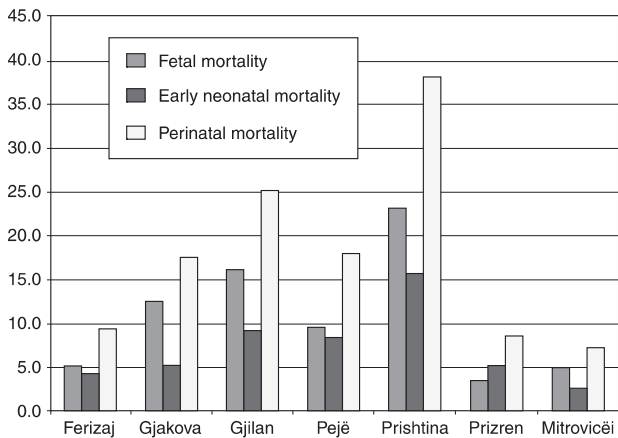


Figure 2. The perinatal mortality rate at respective maternities in Kosovo. Infants ≥500 grams.

Slika 2. Stopa perinatalne smrtnosti postojećih bolničkih rođilišta na Kosovu. Djeca ≥500 grama.

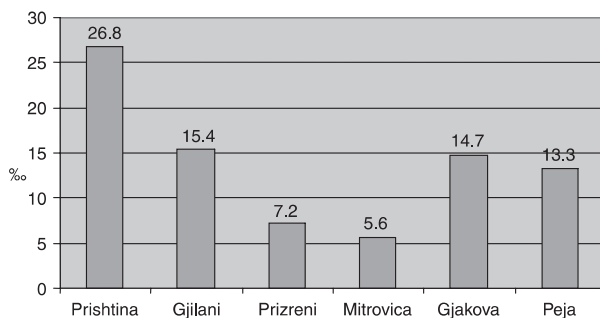


Figure 3. Perinatal mortality rate at regional maternities. Infants body weight ≥1000 grams.

Slika 3. Stopa perinatalnog mortaliteta regionalnih bolničkih rođilišta. Djeca tjelesne težine ≥1000 grama.

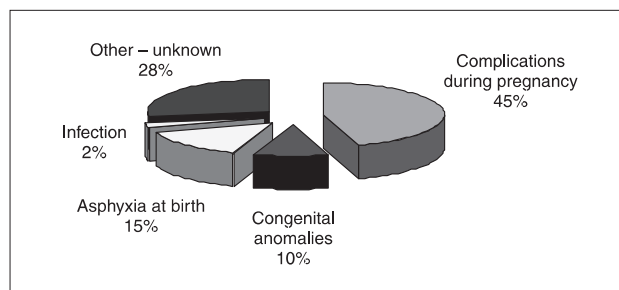


Figure 4. Causes of fetal mortality of 256 infants ≥500 grams.

Slika 4. Uzroci fetalnog mortaliteta 256 djece ≥500 grama.

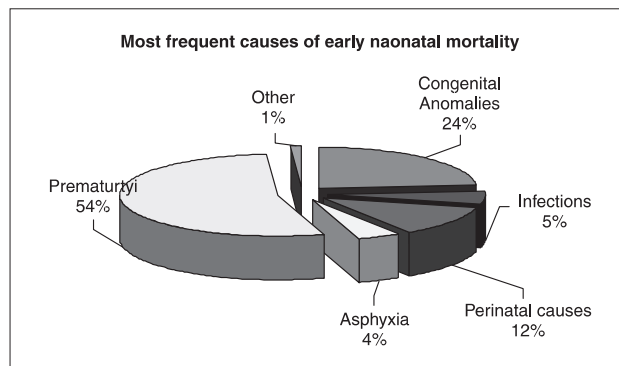


Figure 5. Clinical causes of early neonatal mortality of 282 infants ≥500 g.

Slika 5. Klinički uzroci ranog neonatalnog mortaliteta 282 djece ≥500 g.

Asia (520/100.000). Based on the data from table 1, it results that 99,6% of all maternal deaths occur in developing countries.^{7,10} Highest maternal mortality rate in Europe in 2002 was registered in Tajikistan, 45/100.000.⁵

Most direct causes of maternal deaths in developing countries are: unsafe abortion, anaemia, eclampsia, haemorrhage, obstructed delivery, puerperal infections. The most common indirect causes are: HIV/AIDS, malaria, viral hepatitis, lung tuberculosis, tetanus, heart diseases, sickle-cell anemia etc.¹⁰ Main direct causes of maternal deaths in developed countries are: thromboembolia (with amniotic fluid), haemorrhage, urogenital sepsis, hypertensive diseases. Indirect causes are: cardiovascular diseases and extragenital infections.⁸

Material and methods

There are 8 hospital based maternity wards in Kosovo and 16 out-hospital ones. Data for fetal, early neonatal, perinatal and maternal mortality calculation have been collected and reported from maternities and from their neonatology units all around Kosovo, where the actual deliveries took place. Data were also collected from the Centre for neonatology and premature infants of the Paediatric Clinic in Prishtina, since many neonates with early neonatal death were referred to them. No data have been collected on the home based deliveries, private health institutions, maternity of the Northern part of Mitrovica, Gracanica and from Moroccans Hospital, which all together make up around 6% of the total births in Kosovo.

For the purpose of the correct calculation of perinatal mortality, the early neonatal deaths that occurred in the Neonatology Unit of the Paediatric Clinic in Prishtina are all super-added to respective maternities where the newborns have been delivered.

Data have been calculated in accordance with WHO definitions and indicators. Fetal, early neonatal and perinatal mortality, expressed in pro mille values, were in 2005 calculated from 29.056 deliveries, and 29.445 newborns with body weight ≥ 500 g. For the international comparison, only the births of infants with body weight of ≥ 1000 g were taken into consideration.

Maternal mortality was calculated and presented as a number of mother deaths at 100.000 live births. Causes

of perinatal and maternal deaths have been analysed too. Results are presented in the table and figures.

Results

In Kosovo, during 2005 in total were 29.056 deliveries of infants with body weight of ≥ 500 g. Deliveries were performed in 8 hospital maternities and in 16 out hospital ones. Of those, 4.059 (13,9%) were performed by C-section.

The newborns percentage with low body weight is 6,6% (1943 cases).

Of the total number of births, perinatal loss is calculated to be 672 (22,8‰), of them 390 (13,2‰) are fetal deaths and 282 (9,7‰) are early neonatal deaths. These data are presented in the *Figure 1*.

As it can be seen from *Figure 2*, the highest perinatal mortality rate is registered at the Gynaecologic and Obstetric Clinic in Prishtina – 40,3‰ (fetal deaths 23,1‰, early neonatal deaths 7,6‰) due to the fact of the concentration of pregnancies considered to be the high risk pregnancies, those with fetal malformations and pregnancies referred to the Clinic with fetal death in utero.

For the purpose of the international comparison, perinatal mortality (≥ 1000 g) for 2005 in Kosovo was 17,4‰, fetal mortality 10,25‰, early neonatal mortality 7,2‰ (*Figure 3*).

Most frequent causes of fetal mortality in 256 cases (with known clinical cause) from 390 stillborn stillbirths

Figure 6. Annual number of births ≥ 500 g in Kosovo during the 2000–2005.

Slika 6. Broj poroda djece tjelesne težine ≥ 500 g na Kosovu tijekom 2000–2005 godine.

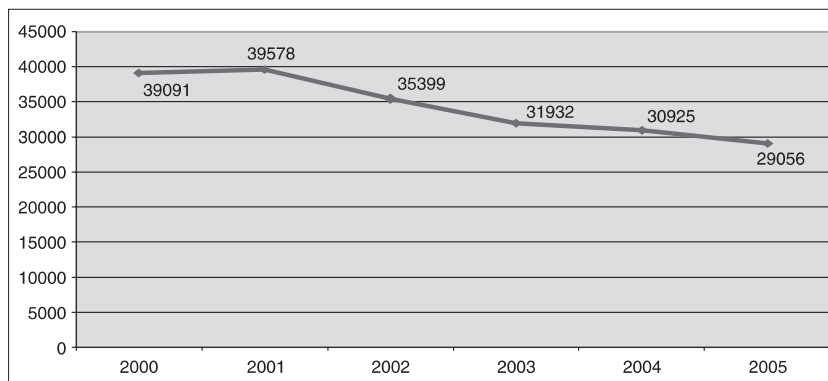
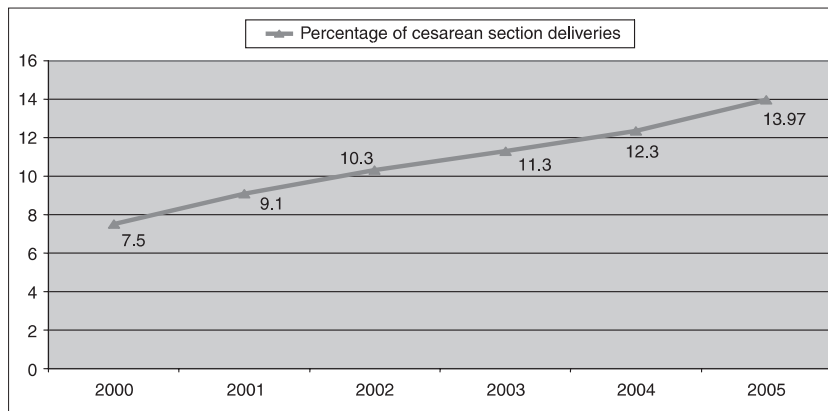


Figure 7. Rate of cesarean section deliveries in Kosovo from 2000 to 2005.

Slika 7. Porodi carskim rezom na Kosovu od 2000 do 2005 god.



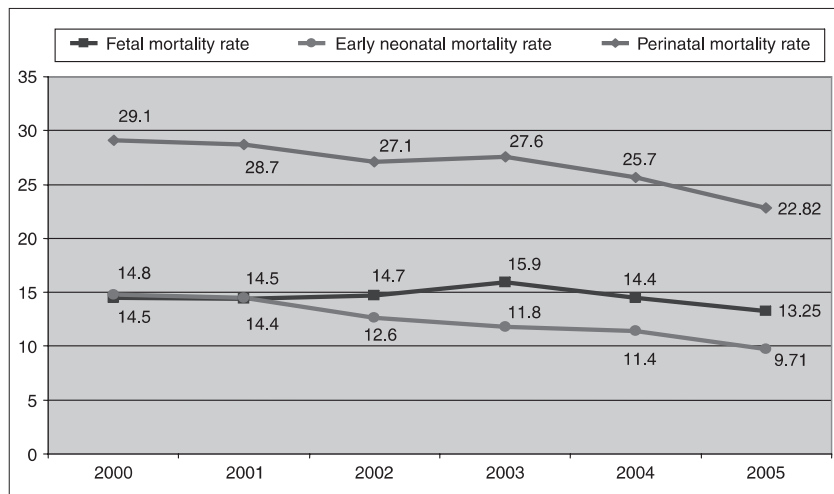


Figure 8. Rate of perinatal, fetal and early neonatal mortality, infants ≥ 500 g. Years 2000–2005.
Slika 8. Stopa perinatalnog, fetalnog i ranog neonatalnog mortaliteta, djeca ≥ 500 g. Godine 2000–2005.

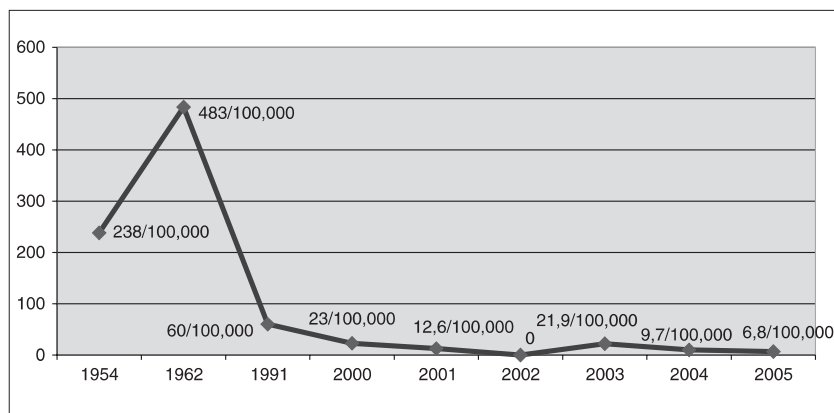


Chart 9. Maternal mortality rate in Kosovo from 1954 to 2005.
Slika 9. Stopa maternalne smrtnosti na Kosovu od 1954 do 2005 god.

are: complications during pregnancy 45.0%, asphyxia at birth 15%, congenital anomalies 10%, infections 2.3%; at 27.7% of cases the cause was unknown (Figure 4).

Figure 5 presents causes of 282 early neonatal deaths: prematurity prevails with 54%, congenital anomalies with 24%, the other perinatal causes with 12%, infections with 5%, asphyxia with 4% and other causes 1%.

As far as the maternal mortality is concerned, two cases in 2005 in Kosovo were reported. That corresponds to the maternal mortality rate of 6.8/100.000.

Case 1. Age 30, first pregnancy, GW 35, eclampsia, caesarean section, infant 1500/44. Post eclamptic coma;

Case 2. Age 34, second pregnancy, GW 33, pre-eclampsia, status post CS, infant 1950/47. Cardiac arrest post sectionem.

Comment

A reduction in the number of the births has been registered in the post-war years in Kosovo, as presented in Figure 6.

A characteristic of these births is that the cesarean sections increased from 7,5% in 2000 to 14% in 2005 (Figure 7).

The rate of perinatal mortality of infants with body weight ≥ 500 g is high, 22,8‰ (fetal mortality 13,25‰, early neonatal mortality 9,71‰). Figure 8 presents the declining tendency in the post war years.

The maternal mortality rate in Kosovo in the past was very high (Figure 9): in 1954 it was 238/100.000, in 1962 483/100.000, while in the post-war it shows a considerable decline, the 2005 data showing 6.8/100.000.^{12,13} Maternal mortality now corresponds to those of other European countries.

The most frequent causes of the fetal mortality are: complications during pregnancy, asphyxia at birth, congenital anomalies and infections, while most frequent causes of the early neonatal mortality are: prematurity, congenital anomalies, other perinatal causes, infections, asphyxia.

Causes of maternal mortality are: pregnancy induced illnesses (pre-eclampsia/ eclampsia), heart diseases.

Conclusion

The decreasing trend in the number of births has continued during the year 2005. While during 2000 there were 39.091 births, in 2005 there were 29.056 reported births.

Percentage of cesarean section deliveries was increasing, to 13.97% in 2005.

The only tertiary care centre in Kosovo, the Gynaecology and Obstetrics Clinic of the University Clinical Centre in Prishtina, still remains overburdened with many referred patients. In 2005, 10,491 deliveries were performed at this clinical centre. The majority of pregnant women that delivered at a clinic are from other cities and regions of Kosovo, while only 2,968 (28,3%) are from Prishtina city and surroundings.

Based on the presented data, perinatal mortality rate has a decreasing trend, from 29.1‰ in 2000 to 22.8‰ in 2005, and for the international comparison from 17.7‰ in 2002 to 17.4‰ in 2005.

Fetal mortality rate in the post war years did not change: the rate for 2000 in Kosovo was 14.5‰ while in 2005 it was 13.25‰, for fetuses ≥ 1000 grams continued from 11.1‰ in 2003 to 10.2‰ in 2005.

The early neonatal deaths decreased from 14.8‰ in 2000 to 9.7‰ in 2005; for infants ≥ 1000 grams from 10.2‰ in 2003 to 7.2‰ in 2005.

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Address for correspondence: Prof Assoc Shefqet Lulaj, Klinika Obstetrike Gjinekologjike, QKUK. 10 000 Prishtinë, Kosovo, UNMIK. E-mail: shlulaj@yahoo.com



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