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ORIGINAL PAPER

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# Causes of an Increased Rate of Caesarean Section

Nenad Miseljic<sup>1</sup>, Ejub Basic<sup>2</sup>, Sanja Miseljic<sup>3</sup>

## ABSTRACT

**Introduction:** The increase in the percentage of the Caesarean sections has got an important place in determination of modern obstetrics. The evaluation of that needs actual, modern opinion for obstetrics and transformation actual obstetric science than investigating the best situation for the mother and child in the actual moment. All medical, organizational, economic and ethical capacities with support of modern diagnostic and therapeutic procedures present a reason for the access in modern obstetrics. It takes the descriptive and analytic method at work. In our country the percentage of the Caesarean section is 15% (according to WHO data), with large variations in frequency depending on the writer and the investigated time. **Aim:** To investigate the prevalence of Caesarean section in Bosnia and Herzegovina until 2017. **Patients and Methods:** In our investigation made prospective and target analysis is investigated at 2017 as a target year. Sources are: patient charts, notes and charts of new born. Group A presents number investigated patients with made Caesarean section in time at one year (2017) in General hospital „Prim. dr A. Nakaš“. Group B presents control group with identical number of deliveries with Caesarean section in 2007 in General hospital „Prim. dr A. Nakaš“ with all variables who detected in investigation group. **Results:** Analysis the number of deliveries finished Caesarean section in time from 2007 to 2017 in General hospital „Prim. dr Abdulah Nakaš“ Sarajevo presents augmentation frequency from 15,5 % in 2007 year to 21,7 % in 2011; smaller number in 2012 to 20,3% and finally 22.9% in 2017 for all deliveries. **Conclusion:** Our investigation shows an important number of Caesarean section and is still working because of clearer obstetric indication but they make a vital indication for the mother and baby. It worries percent of poorly described indications, that are something important for the comfort of doctor and any patients that wants natural delivery. It worries the public because

the more important short term and long-term unwanted effects; Caesarean delivery in correlation with augmentation of this operation.

**Keywords:** delivery, Caesarean section, Incidence.

## 1. INTRODUCTION

Comparative analysis in modern obstetrics is an exact indicator of the percentage increase in the Caesarean section trend. The evaluation of this phenomenon in the observed interval of the past 50 years clearly illustrates this phenomenon (1). In the 1940s, the incidence of Caesarean section was 1% and less than that (2). Here, we evaluate the time through an interval of 35 years, which in the scientific sense confirms the previous allegations. Grinhill states in 1955 that the carcass rate was 5% in the US (3). Berić in 1965 presents the fact that in our area, the Balkans, the rate of Caesarean section is 5%–8% (4).

Martius knows that a small pelvis is a cause mechanical problem, it was overestimated for a long time. He thinks in only 0,5% of every delivery this makes an impossible obstruction (5). Farre notes presents of Caesarean sections as presentation at back 22%, but Ingermarsson 37% finished presentation at the back of Caesarean section (6).

## 2. AIM

To investigate the prevalence of Caesarean section in Bosnia and Herzegovina until 2017.

## 3. PATIENTS AND METHODS

This study included all mothers who delivered a child with Caesarean section at the General Hospital „Prim. dr A. Nakaš“ at 2017. Inclusion criteria assumes that the delivery was completed by Caesarean section in General Hospital „Prim. dr A. Nakaš“ during 2017. The investigated group data contains all the parameters and variables required for the tests. In the

<sup>1</sup>General Hospital „Prim. dr. Abdulah Nakas“, Sarajevo, Bosnia and Herzegovina

<sup>2</sup>Department Gynecology, General Hospital «Prim. dr. Abdulah Nakas», Sarajevo, Bosnia and Herzegovina

<sup>3</sup>Department for Cardiology, Clinic for Heart, Blood Vessel and Rheumatic Diseases. Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

**Corresponding author:** Nenad Miseljic MD, MSc. Department Gynecology, General Hospital «Prim. dr. Abdulah Nakas», Sarajevo, Bosnia and Herzegovina. E-mail: [nenad.miseljic@gmail.com](mailto:nenad.miseljic@gmail.com), ORCID ID: <http://www.orcid.org/0000-0002-4433-8930>.

work technique anamnestic data (personal history, family history), the etiology of innate or acquired intrauterine abnormalities have been used. In addition, the following data were evaluated: age, parity, 2D sonography, 3D sonography, 4D sonography, gynecological findings, colposcopic finding, PAPA test, HPV typing, laboratory findings. The data were statistically processed and tested with Student t and Chi-square test using IBM Statistics SPSS v23.0 statistical package.

#### 4. RESULTS

At the beginning we are presenting a chronological survey in the interval from 1982 to 2017.

If we compare the average number of Cesarean deliveries in Bosnia and Herzegovina before and now, we notice a statistically significant increase of about 6% of Cesarean sections annually to almost 23% (2017) Cesarean section per year ( $t=8.367$ ;  $p=0.0001$ ;  $p < 0.05$ ).

| Number of Cesarean sections performed per year |                        |                             |                        |
|--|------------------------|-----------------------------|------------------------|
| Year   | Total number of births | Number of Cesarean sections | % of Cesarean sections |
| 2007   | 1424                   | 221                         | 15.5                   |
| 2008   | 1488                   | 270                         | 18.1                   |
| 2009   | 1805                   | 300                         | 16.6                   |
| 2010   | 2052                   | 383                         | 18.7                   |
| 2011   | 1583                   | 344                         | 21.7                   |
| 2012   | 1747                   | 355                         | 20.3                   |
| 2016   | 1050                   | 235                         | 22.4                   |
| 2017   | 1514                   | 347                         | 22.9                   |

Table 1. Number and percentage participation of Cesarean deliveries in the General Hospital "Prim.dr. Abdulah Nakaš" by age

Analysis of the percentage share of deliveries completed by the Cesarean section in the period from 2007 to 2017 in the General Hospital "Prim.dr. Abdulah Nakaš" in Sarajevo shows an increase in the percentage share of 221 or 15.5% in 2007 to 344 or 21.7% in 2011, and a slight decline in 2012 to 355 or 20.3% of the total number of deliveries. In 2017, the percentage of Cesarean section was 22.9%.

| Indications for Cesarean section |     |       |
|----------------------------------|-----|-------|
| N                                | %   |       |
| Absolute indications             | 88  | 24.1  |
| Relative indications             | 88  | 24.1  |
| Extended indications             | 189 | 51.8  |
| Total                            | 355 | 100.0 |

$\chi^2=11.425$ ;  $p=0.001$

Table 2. Number of Cesarean section and indication 2012 in the General Hospital "Prim.dr. Abdulah Nakaš" Sarajevo

An overview of indications for Cesarean sections for the group of subjects who completed the same ( $N=355$ ) showed that the most commonly present were extended indications for Cesarean section—189 or 51.8% of cases, followed by the same number (88 or 24.1%) absolute indication and relative indications for Cesarean section. Statistical analysis indicates that there is a significant difference from the expected distribution to the benefits of extended and relative

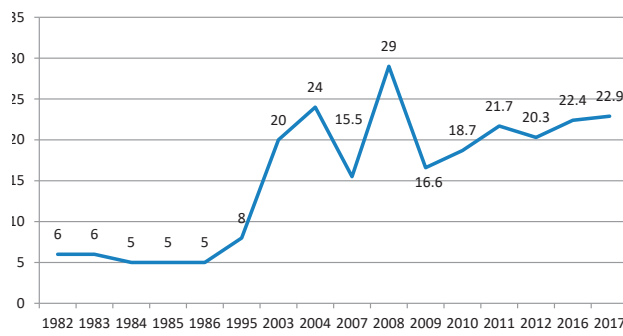


Figure 1. Percentage participation of Cesarean delivery in Bosnia and Herzegovina

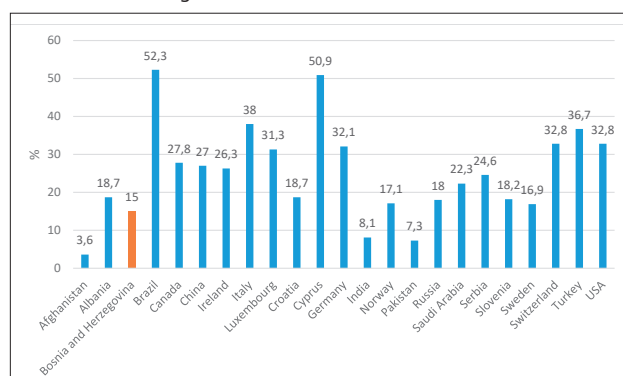


Figure 2. Percentage of deliveries by Cesarean sections in the world

indications for Cesarean section ( $p < 0.05$ ).

#### 5. DISCUSSION

According to the WHO data from 2012, Bosnia and Herzegovina have a very low birth rate by Cesarean section of 15%. The lowest rate was recorded in Afghanistan, Pakistan and India, while the highest rate was recorded in Cyprus (50.9%) and Brazil (52.3%). And in relation to the countries in the Bosnia and Herzegovina environment, there is a lower birth rate by Cesarean incidence, so in Slovenia we record a rate of 18.2%, Croatia 18.7%, and Serbia 24.6%.

The frequency of the Cesarean section is very different not only in some countries, but also in some medical schools. According to the WHO report, the incidence of Cesarean section is: USA—32%, England—24%, China—27%, Brazil—50%. In our country according to the WHO report, the incidence of Cesarean incisions is from 15% to 20%. The maternal mortality after Cesarean is always greater than after vaginal delivery (6). The most common causes are exacerbation of the underlying disease, bleeding, acute heart failure, incidents in anesthesia (7-10). Panella points out that hypertension and eclampsia are the most common causes of death (11). Previously, the most indications for the Cesarean section were absolute, and very few were relative. The most common conditions were after posterior Cesarean incontinence, fetal asphyxia, predominant posture, EPH gestosis etc. Today, still, the frequency of absolute and relative indications occupies an important place, with indications of absolute and relative defects toward extended inductions (11-14). They occur and more often new indications, which in a significant sense have a basis in diseases that are treated and supervised by various

specialties outside gynecology (15-18).

## 6. CONCLUSION

We are the contemporaries of the increased rate of Cesarean section, which is a universal trend in obstetrics in our country and in the world.

Indications for the Cesarean section in the past belonged mainly to the sphere of the absolute. Today they are making more and more distortion to the extended indications.

More and more „new indications“ of the caesarean section appear, which continue to be indicated by the obstetrician—the operator, and in which they often have significant influence and doctors of other specialties.

The increase in Cesarean section compared to vaginal birth carries commonly known dangers that are still more common in Cesarean section than in vaginal delivery.

Promoting vaginal delivery that ultimately fits with natural laws should not only be the property of preventive medicine, but it also belongs to curative medicine as part of a unique fight for a healthy population.

- **Author's contribution:** N.S. and E.B.. gave substantial contribution to the conception or design of the work and in the acquisition, analysis and interpretation of data for the work. Each author had role in drafting the work and revising it critically for important intellectual content. Each author gave final approval of the version to be published and they agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
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