

# Factors that Affect Cesarean Delivers in the General Hospital of Guaranda (Ecuador)

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## Abstract

**Aim:** Cesarean section is a surgical procedure that involves the removal of the fetus through the abdominal through an incision in the uterus. The most common causes for this practice are maternal, fetal, maternal-fetal, and obstetrics. The recommended percentage of cesarean sections according to the World Health Organization is 10–15%. However, in our country, it exceeds 45%. Considering this, the present work was proposed to study the causes that affect the performance of cesarean sections in the General Hospital of Guaranda. **Method:** To this end, a retrospective, descriptive, and cross-sectional analysis was performed on a total of 319 patients who underwent cesarean section during the second semester of 2015, an analysis of their respective medical histories was carried out, as well as a direct interview with three gynecologist-obstetrician specialists of the hospital. **Results:** It was determined that the number of cesarean sections performed was 319 (44%) compared to the number of normal deliveries that were 403 (56%); of the caesarean sections, 63% were emergency due to premature membrane rupture, prolonged labor, fetal distress, and cephalopelvic disproportion, and the remaining 37% was by medical prescription. **Conclusion:** In conclusion, the physicians consider that the preparatory conditions of the mother significantly influence the practice of a cesarean section.

**Key words:** ANMH, cesarean section, incidence

## INTRODUCTION

Cesarean, the origin of the procedure, as well as its name, are not completely known, appearing the first reports in the 15<sup>th</sup> century A.C.<sup>[1]</sup> In the beginning, it was applied when vaginal delivery was impossible and to protect the life of the mother even when its mortality was close to 100%. Cesarean section is a surgical procedure that consists in the fetus extraction through the abdominal by an incision in the uterus.<sup>[2]</sup> To the extent that their morbidity and mortality have decreased, their indications have increased, both in the management of maternal and fetal pathology. At present, its execution is even accepted at the request of the patient, factor that has been relevant in the increase of its incidence.

The causes for the practice of cesarean section, according to the Ministry of Public Health of Ecuador “Ministerio de Salud Pública” (MSP,

2016)<sup>[3]</sup> are: Maternal (benign or malignant tumors of the birth canal, previous uterine surgery, and pathology that compromises maternal/fetal well-being, psychosis, and mental retardation); fetal (dystocia of presentation, multiple pregnancy, and fetal macrosomia “>4000 gr”); maternal-fetal (fetal death, risk of vertical transmission of HIV or HPV, active genital herpes, severe pre-eclampsia, eclampsia, and HELLP syndrome); and obstetrics (previous placenta, previous uterine rupture, and cephalopelvic disproportion). The recommended percentage of cesarean sections by the

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World Health Organization (WHO) is 10–15%. However, in Ecuador, the cesarean sections performed exceed 45%.<sup>[4]</sup>

In a study conducted in the Andean country during 2010 by Patiño *et al.*,<sup>[5]</sup> cesarean sections had represented 32.87% of the total births in the hospital “José Carrasco Arteaga” of the city of Cuenca, and the authors concluded that the main reason for performing this medical practice is the antecedent of a previous cesarean section, acute fetal compromise, alterations in blood pressure during pregnancy, and both maternal and fetal dystocias; in another study conducted by Moya<sup>[6]</sup> reported that “the rate of caesarean sections in relation to deliveries vaginal cancers observed in the Hospital of Instituto Ecuatoriano de Seguridad Social, Ambato, and in the study was 61.91% also identified that the first cause of cesarean section was the antecedent of a previous cesarean section.”

On the other hand, among the advantages of cesarean section, the following are listed: The mother can choose the exact date of birth according to what her doctor indicates, this type of delivery allows the mother to reduce maternal stress (fully controlled environment), labor is short in relation to vaginal delivery, guarantees that surgery will be performed by specialists, prevents post-mature births (with more than 42 weeks of gestation), eliminates the risk of complications related to the vaginal labor process, as a brachial plexus injury related to shoulder dystocia, bone trauma (clavicle, skull, and humerus fracture), or asphyxia caused by intrapartum complications, and reduces the long-term risk of the uterine or bladder prolapse and urinary incontinence in the mother.<sup>[7]</sup>

## METHODS

The present study was carried out in the area of neonatology of the Alfredo Noboa Montenegro Hospital (ANMH) in the city of Guaranda, in the period between July and December 2015. The scope of the study was investigative, retrospective, descriptive, and transversal, for which the universe of study was 319 patients who, during the second semester of 2015, underwent cesarean in the ANMH.

Data collection were carried out through indirect observation of the clinical histories of the patients who underwent surgery to extract data as causes of cesarean or other related and direct interviews with the three gynecologists - obstetricians of the hospital. The results obtained were compared with the number of normal births in the study period.

## RESULTS AND DISCUSSION

After this study, the number of cesarean sections performed in the ANMH was 319 (44%) in relation to the number of normal births that were 403 (56%), and it can be considered that these values are higher than those established by the WHO that recommends maximum values of between 10 and 15%

**Table 1:** Births by cesarean section in the second semester of 2015, ANMH monthly description

Months	n (%)
July	64 (20)
August	67 (21)
September	64 (20)
October	42 (13)
November	43 (13)
December	39 (13)
Total	319 (100)

**Table 2:** Type of cesareans performed in the second semester of 2015 in the ANMH Type

Type	n (%)
Programmed cesarean section	118 (37)
Cesarean section for emergency	201 (63)
Total	319 (100)

**Table 3:** Maternal cesarean causes carried out in the second semester of 2015, in the ANMH

Maternal causes	n (%)
Previous Cesarean Section	94 (29.47)
Cephalopelvic disproportion	42 (13.17)
Circular cord	4 (1.25)
Prolonged labor	4 (1.25)
Pelvis close	3 (0.94)
Uterine hypertonia	1 (0.31)
Pelvic presentation	1 (0.31)
Previous placenta	1 (0.31)
Prolapse of cord	1 (0.31)
Total	151 (47.32)

**Table 4:** Fetal cesarean causes carried out in the second semester of 2015, in the ANMH

Maternal causes	n (%)
Acute fetal distress	44 (13.79)
Presentation dystocia 2	18 (5.64)
Fetal tachycardia	10 (3.13)
Twin pregnancy	4 (1.25)
Fetal macrosomia	3 (0.94)
Breech presentation	2 (0.63)
Circular double cord	2 (0.63)
Incompatibility of factor RH	2 (0.63)
Total:	83 (26.01)

of deliveries by cesarean section. However, in our study, the percentage data obtained are lower than the national average

**Table 5:** Maternal-fetal cesarean causes carried out in the second semester of 2015, in the ANMH

Maternal-fetal causes	n (%)
Severe pre-eclampsia	3 (2.82)
Gestational hypertension	2 (0.63)
Eclampsia	1 (0.31)
Fetal bradycardia	1 (0.31)
Total	13 (4.07)

**Table 6:** Obstetric causes of cesarean sections performed in the second semester of 2015, in the ANMH

Obstetric causes	n (%)
Oligohydramnios	1 (5.64)
Failed driving	11 (3.45)
Premature rupture of membranes	9 (2.82)
Induction failed	7 (2.19)
Prolonged expulsion	6 (1.88)
HPV	3 (0.94)
External genital condylomatosis	2 (0.63)
Vaginosis	2 (0.63)
Phobia at delivery	2 (0.63)
Post-term pregnancy without labor	2 (0.63)
Functional hernia	1 (0.31)
Hip luxation	1 (0.31)
Coreanconitis	1 (0.31)
Epilepsy	1 (0.31)
Bicornuate uterus	1 (0.31)
Mild pre-eclampsia	1 (0.31)
Seizure	1 (0.31)
Succenturiate placenta	1 (0.31)
Total	70 (21.92)

HPV: Human papillomavirus

(49%).<sup>[4]</sup> Even in a study carried out in the Valles Hospital, Quito, by Andrade-Pazmiño,<sup>[8]</sup> the average deliveries by cesarean section are 83.98%, and this value is the highest found in the bibliography of national registers [Table 1].

The highest number of cesarean sections performed in the first quarter of the period studied, with a similar behavior that fluctuated between 20% and 21%, with respect to the total number of cesarean sections for the semester. In the 3 months afterward, there was a decrease of approximately 7–8%, which represented between 20 and 25 fewer patients, which also remained constant. This monthly description of the data reveals that the last 3 months, despite the decrease, did not manage to be within the range of the WHO indicator [Table 2].

Of the 319 cesarean sections performed in the study period, 63% were emergency due to causes such as premature

membrane rupture, prolonged labor, fetal distress, and cephalopelvic disproportion among others; while that, the remaining 37% were programmed surely for causes that according to medical prescription were necessary to protect the life of the mother and her child, and among these causes, it emphasizes previous cesarean section, birth phobia, twin births, hypertension, and others [Table 3].

Similar data were obtained in a study conducted by Patiño *et al.*,<sup>[5]</sup> in the José Carrasco Arteaga Hospital of the city of Cuenca, the percentage of emergency cesareans was of 64.90% and programmed of 35.10%. However, emphasizes that according to a debate on organic law for the humane care of pregnancy, childbirth, and post-partum, in the National Assembly of Ecuador, they determined that the country has commercialized this type of surgical interventions since a 80% of this practice is performed in private clinics, and on the other hand, the doctors who treat public hospitals do not fully justify the reason for having performed cesareans in their respective hospitals [Table 4].<sup>[9]</sup>

In this study, the description of the data allowed us to visualize that between 3 and 4 patients of every 10 cesarean sections performed have programmed it with the doctor; and as a consequence, the remaining 6 are in unforeseen conditions that compromise a risk of death; therefore, they undergo surgical intervention not foreseen.

According to a study carried out by Jáuregui *et al.*,<sup>[10]</sup> in the Pablo Jaramillo Foundation, Cuenca, 68% of the factors of the practice of cesarean sections are due to maternal causes, of which previous cesarean sections with values of 33%. In another study developed by Patiño *et al.*,<sup>[5]</sup> 36.54% are due to previous cesarean sections and 19% due to pelvic narrowing. Andrade-Pazmiño<sup>[8]</sup> obtained values of 23.78% in causes of cephalopelvic disproportion for the practice of cesarean sections in the Valle Hospital, Quito [Table 5].

Fetal causes in the study carried out by Jáuregui *et al.*,<sup>[10]</sup> were 21%. Patiño *et al.*,<sup>[5]</sup> obtained values of 8.78% of causes due to fetal dystocia. In another study developed by Andrade-Pazmiño,<sup>[8]</sup> it was determined that 27.62% of the cesarean sections performed at the Valles hospital, Quito, are due to fetal causes. All these results turned out to be quite similar to those obtained in our study.

Jáuregui *et al.*,<sup>[10]</sup> obtained values of 12% in maternal and fetal causes for the practice of cesarean sections. About 11.90% of the causes of cesarean section were due to arterial hypertension.<sup>[5]</sup> These values are quite high compared to those obtained in our study [Table 6].

The three specialists agree fully that the cesarean sections are performed by medical prescription after a gynecologic-obstetric evaluation of the patients. Furthermore, two specialists pointed out that the obstetric assessment protocols determined by the Ministry of Public Health are applied.

While the other specialist reported that, if it is apply the Robson test, because it also considers it closely related to the protocols of the MSP.

In conclusion, after this study, it was possible to determine that the main factors that lead to the practice of cesarean sections in the ANMH in the city of Guaranda are maternal causes, followed by fetal causes, which could be deduced that pre-delivery care has a significant influence for the final outcome to be a cesarean section, among multiple pre-delivery factors, they can highlight as follows: Mother's diet, health, psychological preparation, and mother's family and social environment.

## CONFLICT OF INTEREST

There are no conflicts of interest.

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