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Comparing the Blood Values of the Patients Operated by Cesarean Under Spinal and General Anesthesia

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Abstract

Objective: To compare preoperative and postoperative hematocrit and hemoglobine values in patients who had cesarean section under spinal and general anesthesia.

Methods: The mean age of the cases operated by local and general anesthesia was 29.61±6.85 and 29.59±5.85, and there was not meaningful statistically (p>0.05). The preoperative Htc values for group 1 and group 2 were; 34.64±4.76 and 33.47±3.93 (t=1.89, p=0.06), and Hb values: 11.56±1.78 and 11.21±1.46 (t=1.51, P=0.13). The postoperative Htc values for group 1 and group 2 were; 30.21±3.92 and 29.18±3.74 (t=1.89, p=0.059), Hb values: 9.91±1.42 and Hb: 9.56±1.40 (t=1.75, P=0.081).11 cases of group 1 had 24 units of blood transfusion and 16 cases of group 2 had 43 units.

Results: 200 pregnant cases with low risk for bleeding who delivered with cesarean section, were divided into two groups according to their anesthesia type, as 100 spinal (group 1) and 100 general (group 2). The demographic specialities, cesarean indications, preoperative and postoperative hematocrit (Hct) and hemoglobin (Hb) values were determined. The data were evaluated with SPSS 15.0 For Windows statistics package programe and the data were evaluated as homogen. Independent Samples T-Test analyse were used as statistically analyse method.

Conclusion: We did not find any difference of blood loss in the patients with low risk of bleeding operated by cesarean under spinal and general anesthesia. However, the cases operated by general anesthesia had more blood transfusion. The statistically insignificant result between the groups is because of the low number of our cases. With wider and better-designed studies.

Keywords: Cesarean, anesthesia type, blood loss.

Spinal ve genel anestezi uygulanan sezaryen doğumlarında kan değerlerinin karşılaştırılması

Amaç: Spinal ve genel anestezi uygulanan sezaryen doğumlarında preoperatif ve postopertif hematokrit ve hemoglobin değerlerini karşılaştırmaktır.

Yöntem: Sezaryen uygulanan kanama açısından düşük riskli 200 gebe, anestezi tipine göre 100 spinal (grup 1) ve 100 genel (grup 2) olmak üzere iki gruba ayrıldı. Olguların demografik özellikleri, sezaryen endikasyonları, preoperatif ve postoperatif ortalama hematokrit (Htc) ve hemoglobin (Hb) değerleri belirlendi. İki grupta postoperatif dönemde yapılan kan transfüzyonu miktarı karşılaştırıldı. Elde edilen veriler SPSS 15.0 For Windows istatistik paket programı ile değerlendirelerek verilerin homojen olduğu tespit edildi. İstatistiksel analiz yöntemi olarak Indepedent Samples T-Test analizi kullanıldı.

Bulgular: Spinal anestezi ve genel anestezi uygulanan grupların yaş ortalaması 29.61±6.85 ve 29.59±5.85 olarak bulundu, gruplar arasında fark saptanmadı (p>0.05). Preoperatif, grup 1 ve grup 2 Htc değerleri: 34.64±4.76 ve 33.47±3.93 (t=1.89, p=0.06), Hb de-

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ğerleri: 11.56±1.78 ve 11.21±1.46 (t=1.51, p=0.13) olarak bulundu. Postoperatif, grup 1 ve grup 2 Htc değerleri: 30.21±3.92 ve 29.18±3.74 (t=1.89, P=0.059), Hb değerleri: 9.91±1.42 ve Hb: 9.56±1.40 (t=1.75, P=0.081) olarak bulundu. Grup 1 olgularından 11 hastaya 24 ünite, grup 2 olgulardan 16 hastaya 43 ünite eritrosit süspansiyonu verildi.

Sonuç: Kanama açısından düşük riskli hastalara spinal ve genel anestezi uygulanarak yapılan sezaryen doğumlarında, kan kaybı bakımından karşılaştırıldığında anlamlı bir fark saptanmadı. Ancak genel anestezi uygulanan grupta postoperatif dönemde daha fazla eritrosit suspansiyonu transfüzyonu yapıldığı saptandı. Olgu sayımızın az olması nedeniyle gruplar arasında anlamlı fark bulunmadığını düşünmekteyiz. Daha kesin sonuç elde edebilmek için daha geniş çaplı çalışmalara gerek vardır.

Anahtar Sözcükler: Sezaryen, anestezi tipi,kan kaybı.

Introduction

Caesarean births are the most frequently applied obstetric operations in the world . In the United States (USA) between 1965 and 1988, the caesarean rate has increased of 4.5% from, up to 25% but then a normal with the increase of vaginal birth after caesarean between 1996 and 1989, this ratio significantly decreased .Then again until 2002 caesarean rate has increased and this year reached the highest rates that were recorded.[1] In our country, there is no precise data, but with regional differences, this rate is around 23%. Obstetric hemorrhage, both in developed countries and also in developing countries is still the most important cause maternal mortality. In normal birth 300-500 ml and 900-1000 ml in caesarean is also met as normal blood loss. Bleeding is more than 1500 ml, falling more than 10% of hematocrit value and the need for blood transfusions to correct hemodynamic is defined as obstetric hemorrhage.[2] In caesarean births both regional (spinal, epidural) and general anesthesia can be used. In 1982 using general anesthesia in the United States was in half of caesarean birth. By 1998, this ratio fell below 10%. In more recent years, spinal anesthesia has began to be used much more. In the cases with hypovolemia, infection, and coagulopathy, general anesthesia may be preferred to regional anesthesia. However, gastric contents aspiration during general anesthesia, intubation difficulties, maternal hyperventilation, neonatal depression, and complications such as bleeding connected to uterine atony is to be kept in mind.[3] The purpose of this study is to compare the preoperative and postoperative hematocrit and hemoglobin values in the caesarean birth under local (spinal) and general anesthetic, and uncover the effect of anesthesia type on postoperative bleeding.

Methods

At Dicle University Faculty of Medicine Gynecology and Obstetrics Department between January 2007 to December 2008, 200 pregnant women who had cesarean section with low risk of bleeding were divided into groups depending on the type of anesthesia as; 100 spinal anesthesia (group 1) and 100 general (group 2). Demographic characteristics of the cases, caesarean indications, preoperative and postoperative average hematocrit (HTC) and hemoglobin (Hb) values were examined.The postoperative blood samples was taken before the transfusions. Pregnant women with high-risk of bleeding such as placenta previa totalis, abruption placenta, uterus rupture were excluded from the study. During spinal anesthesia Atrocan 26 Gauche spinal needle was used. Cesarean section was performed with lower segment transverse incision. The amount of blood transfusion to the patients in the postoperative

period has been identified. The data were evaluated wirh SPSS 15.0 For Windows statistics package programme and the datas were evaluated as homogen. Indepedent Samples T-Test analyse were used as statistically analyse method.

Results

The mean age of the cases operated by local and general anesthesia was 29.61±6.85 and 29.59±5.85, and there was not meaningful statistically (p>0.05).The perioperative Htc values for group1 and group2 were; 34.64±4.76 and 33.47±3.93 (t=1.89, p=0.06), and Hb values: 11.56±1.78 and 11.21±1.46 (t=1.51, p=0.13). The postoperative Htc values for group1 and group2 were; 30.21±3.92 and 29.18±3.74 (t=1.89, p=0.059), Hb values: 9.91±1.42 and Hb: 9.56±1.40 (t=1.75, p=0.081). 11 cases of group 1 had 24 units of blood transfusion and 16 cases of group 2 had 43 units.

Table 1. Demographic characteristic for two groups.

	Group 1 (n:100)	Group 2 (n:100)	p
Age (years)	29.61±6.85	29.59±5.85	>0.05
Gravida	4.18±1.6	4.019±0.9	>0.05
Parity	2.62±0.9	2.72±1.0	>0.05
Birth week	37.23±1.4	38.11±2.5	>0.05
Birth weigt (g)	3128±527.2	3022±486.1	>0.05

Table 2. Cesarean indications for two groups.

Indication	Grup 1 (n=100)	Grup 2 (n=100)
Previuse C/S	40	28
Fetal distres	13	36
Macrosomia	11	2
Presentation abnormalities	10	10
Multiple pregnancies	6	4
CPD*	2	7
Others	18	13

*Cephalo-pelvic disproportion

Discussion

By the years , due to increasing rates of caesarean rates alternative methods of anesthesia is more used and patients against taking the results of the awareness and expectation into a more comfortable method to anesthesia. Both spinal and general anesthesia used for cesarean section have advantages and disadvantages and there is not a method which completely ideal. The most important factors for choice of anesthetic method are; pregnant systemic problems and wishes, the urgency of the operation, the surgeon and the anesthetist's preference for the experience.[4] In our clinic in an emergency is more preferred general anesthesia. The spinal anesthesia for elective caesarean and replicated is preferred. In Caesarean birth, especially the general anesthesia, intraoperative blood loss can be increased by chancing uterine blood flow and contractions depending on the change of perfusion pressure and uterine vascular resistance. Afobi et al. found in their study that, cases operated under spinal anesthesia had lower amounts of blood loss.[5] Lertakyamanee et al. reported in their study that; cases operated by general anesthesia had more blood loss and lower postoperative hematocrit levels compared to regional anesthesia.[6] We did not found statistically significant postoperative hematocrit levels between the groups. We think that these results are related with the number of our cases and more transfusion to group 2. In the 1970s, the 4.6% rate of transfusion dependent on obstetric bleeding today has fallen until 0.9%. This is because the patients with risk of bleeding previously identified and the necessary precautions are taken.[7] The cases operated by general anesthesia had more erythrocyte transfusions in our study.

Conclusion

In conclusion, general anesthesia has been shown as a increasing factor of bleeding in patients with caesarean section in many studies. We did not found statistically significant difference on the intraoperative maternal bleeding in our study, but in the general anesthesia group more blood transfusion were made. Because of our small number of groups, we think that results of this study were not statistically significant. To obtain more accurate results , large-scale studies are needed.

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