



Anaesthetic Method Preference of Obstetricians for Caesarean Section

Obstetrisyenlerin Sezaryen Operasyonlarındaki Anestezi Yöntemi Tercihleri

Recai Dağlı¹, Selda Songur Dağlı²

¹Department of Anaesthesiology and Reanimation, Ahi Evran University Faculty of Medicine, Kırşehir, Turkey

²Clinic of Obstetrics and Gynecology, Ahi Evran University Training and Research Hospital, Kırşehir, Turkey

Objective: Anaesthesiologists are applying regional anaesthesia for caesarean section at an increasing rate compared to previous years. In our study, we tried to evaluate the perspective of obstetricians towards this trend.

Methods: Questionnaires were sent to e-mail addresses of obstetricians via the internet; 195 obstetricians replied. Sex, age, work place, employer, working durations as consultant, preference of anaesthesia for caesarean section and their bias towards regional anaesthesia were asked with these questionnaires. A 5-point Likert scale was used to evaluate their bias towards regional anaesthesia.

Results: While 82.1% of obstetricians (n: 160) preferred regional anaesthesia, 17.9% of obstetricians (n: 35) favoured general anaesthesia for caesarean section for both themselves and their primary relatives. However, 80% of the participants opted for regional anaesthesia for their patients; only 20% of the participants still preferred general anaesthesia for caesarean section. Chi-square tests that were used to evaluate the relationship between demographic data and anaesthesia choices of obstetricians for both themselves, their primary relatives and their patients did not reveal any statistically significant differences ($p < 0.05$).

Conclusion: A large portion of Turkish obstetricians consider regional anaesthesia a safe procedure and prefer it highly for both themselves and their patients.

Key Words: Caesarean section anaesthesia, regional anaesthesia, preference of anaesthesia

Amaç: Anestezistler sezaryen için önceki yıllara göre daha yüksek oranda rejyonal anestezi uygulamaktadır. Yaptığımız çalışmada obstetrisyenlerin bu değişime yaklaşımlarını değerlendirmeyi amaçladık.

Yöntemler: İnternet aracılığıyla obstetrisyenlerin elektronik posta adreslerine anket formları gönderildi. Anket formlarını 195 obstetrisyen cevapladı. Bu ankette obstetrisyenlerin cinsiyet, yaş, çalıştıkları bölge, çalıştıkları kurum, uzman olarak çalıştıkları süre, sezaryen ameliyatlarında kendileri ve hastaları için tercih ettikleri anestezi yöntemi, rejyonal anestezi tercih etme veya etmeme nedenleri soruldu. Rejyonal anestezi tercih etme ve etmeme nedenleri ile ilgili düşüncelerini öğrenmek amacıyla 5 puanlı Likert skalası uygulandı.

Bulgular: Obstetrisyenlerin kendisi veya birinci derece yakını için yapılacak sezaryenlerde; %82,1'i (n=160) rejyonal anestezi yöntemini tercih etmekte iken %17,9'u (n=35) genel anesteziyi tercih etmektedir. Araştırmaya katılan obstetrisyenler; sezaryen uygulayacakları hastaları için %80,0'i (n=156) rejyonal anestezi yöntemini tercih etmekte iken %20,0'si (n=39) genel anesteziyi tercih etmektedir. Obstetrisyenlerin hem kendisine ve birinci derece yakınları için tercih ettiği hem de hastalarına uygulayacağı anestezi yöntemi tercihleri ile demografik bilgiler arasındaki ilişkinin incelenmesi amacıyla uygulanan Ki-Kare testi sonucunda anlamlı bir ilişki bulunmamaktadır ($p > 0,05$).

Sonuç: Türkiye'de obstetrisyenlerin büyük bir kısmı sezaryenlerde rejyonal anesteziyi güvenli bulmakta ve hem kendilerine hem de hastalarına yüksek oranda tercih etmektedirler.

Anahtar Kelimeler: Sezaryen anestezisi, rejyonal anestezi, anestezi tercihi

Introduction

The preference of anaesthetic method depends on surgical indication, emergency, the condition of both pregnant and child and choice of the patient.

The main reasons for maternal mortality due to anaesthesia are the aspiration of gastric components and difficult intubations. Although regional anaesthesia has some risks, such as total spinal anaesthesia and toxicity, the relative mortality rate of general anaesthesia is 16 times higher than regional anaesthesia (1); therefore, regional anaesthesia is preferred worldwide for elective surgery (2).

In conjunction with the exponential growth in obstetrical analgesia and anaesthesia practise in Turkey, regional anaesthesia induction, especially in university hospitals, has taken place widely within obstetrical anaesthesia practices in recent years (3).

Anaesthesiologists mostly prefer regional anaesthesia for caesarean section owing to increased risks of difficult intubation and aspiration in pregnancy. Nowadays, the most frequently used anaesthetic method for caesarean section is single-shot spinal anaesthesia, which is fast, provides adequate muscle relaxation and is cost-effective (4).

Most pregnant women favour regional anaesthesia in order to feel the excitement of labour and to stay awake. Anaesthesiologists and obstetricians have more influence on the choice of anaesthetic method. Other health workers, previous anaesthesia experiences and printed and/or visual media may also have an impact on anaesthetic preferences (5).

Rates of caesarean section and regional anaesthetic practices have been increasing in recent years. This study has been carried out to point out the changes in regional anaesthesia preference rates and the reasons for these changes among obstetricians.

Methods

Questionnaires were sent to the e-mails of obstetricians via the internet after receiving an approval from the Clinical Studies Approval Committee of Erciyes University (08.01 2013 and 2013/11). Consent was obtained from participants.

One hundred ninety-five obstetricians replied. Sex, age, work place, employer, duration of practice, preference of anaesthesia method for caesarean section for both themselves and their patients and their bias towards regional anaesthesia induction were asked to the participants by these questionnaires.

A 5-point Likert scale was used to evaluate regional anaesthesia bias (1: definitely agree, 2: agree, 3: no opinion, 4: disagree, 5: definitely disagree).

Statistical analysis

Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) for Windows 16.0 was used for data analysis. χ^2 (chi-square) tests were used. $P < 0.05$ was accepted as statistically significant.

Results

Out of 195 participants, 41% (n: 80) was female and 59% (n: 115) was male.

Eighty percent of the participants (n:156) opted for regional anaesthesia for their caesarean section patients; only 20% of the participants (n: 39) preferred general anaesthesia (Table 1). However, 82.1% of obstetricians (n: 160) pre-

ferred regional anaesthesia for caesarean section when it can to themselves or their primary relatives, and the other 17.9% of obstetricians (n: 35) still preferred general anaesthesia (Table 1). There was no statistically significant differences in sex, age, working duration, work place and anaesthetic method preference when demographic data and anaesthetic method preferences of the obstetricians for their patients were compared with chi-square test ($p > 0.05$) (Table 1).

Chi-square test was also used to evaluate for the comparison of obstetricians' anaesthetic method preference for both themselves and their primary relatives, and the demographic data did not reveal statistically significant differences between sex, age, working duration, work place and anaesthetic method ($p > 0.05$) (Table 1).

Table 2 gives the preference of regional anaesthesia choice of obstetricians.

The reasons why participants do not prefer regional anaesthesia are reported in Table 3.

Discussion

Caesarean section is usually preferred when labour suspension, foetal dysrhythmia, cephalopelvic disproportion, malpresentation, prematurity, history of previous caesarean section and uterine surgery exist. The choice of the anaesthetic method depends on emergency, foetal and maternal welfare, preference of patient and their obstetrician and competence of the anaesthetists.

Regional anaesthesia for caesarean section is usually preferred due to lower foetal exposure to depressant drugs, lesser risk of gastric content aspiration and difficult maternal intubation compared to general anaesthesia, allowance to maternal excitement during labour and decreased requirement for postpartum analgesia. Regional anaesthesia is opted in over 90% of caesarean sections in the USA, the UK and Latin America (2). This rate was lower in Turkey. Töre G and colleagues reported that the regional anaesthesia induction rate for caesarean section had increased in 2005, and the rate was higher than in 1998 in all hospital types (3). Moreover, Toker et al. (6) reported that regional anaesthesia rates in caesarean sections reached 77% in their university hospital. In our study, the support of obstetricians for regional anaesthesia was high in all hospitals; however, no statistically significant difference was found between groups (Table 1). We concluded that the high preference of regional anaesthesia among obstetricians is due to the development in obstetric anaesthesia and analgesia in our country, country-wide distribution of anaesthesiologists highly experienced in this subject and the approach of the obstetric and gynaecologic community toward regional anaesthesia.

The contraindications for regional anaesthesia are sepsis, coagulopathy, uncorrected hypovolemia, serious haemorrhage, infection in the insertion site and, most importantly, rejection by the patient.

Table 1. Relationship between anaesthetic method and demographic variables.

		For their patients				For themselves and relatives							
		Method	Anaesthesia Method			Test	Regional	General	Total	Test			
			Regional	General	Total								
Gender	Female	n	65	15	80	Chi-square: 0.132 sd:1 p:0.716	65	15	80	Chi-square: 0.059 sd:1 p:0.808			
		%	81.3	18.8	100		81.3	18.8	100				
	Male	n	91	24	115		95	20	115				
		%	79.1	20.9	100		82.6	17.4	100				
Age	≤35	n	40	11	51	Chi-square: 1.533 sd: 3 p:0.675	43	8	51	Chi-square: 3.789 sd:3 p:0.285			
		%	78.4	21.6	100		84.3	15.7	100				
	36-45	n	64	16	80		67	13	80				
		%	80	20	100		83.8	16.3	100				
	46-55	n	34	10	44		32	12	44				
		%	77.3	22.7	100		72.7	27.3	100				
	≥55	n	18	2	20		18	2	20				
		%	90	10	100		90	10	100				
Duration of Practice	≤5 years	n	37	11	48	Chi-square: 3.353 sd: 5 p:0.646	40	8	48	Chi-square: 7.734 sd: 5 p:0.172			
		%	77.1	22.9	100		83.3	16.7	100				
	6-10 years	n	26	9	35		29	6	35				
		%	74.3	25.7	100		82.9	17.1	100				
	11-15years	n	36	5	41		38	3	41				
		%	87.8	12.2	100		92.7	7.3	100				
	16-20years	n	26	6	32		23	9	32				
		%	81.3	18,8	100		71.9	28.1	100				
	21-25years	n	18	6	24		17	7	24				
		%	75	25	100		70.8	29.2	100				
≥26 years	n	13	2	15	13	2	15						
	%	86.7	13.3	100	86.7	13.3	100						
Region	Mediterranean Region	n	14	2	16		14	2	16				
		%	87.5	12.5	100		87.5	12.5	100				
	Eastern Anatolia	n	9	2	11		9	2	11				
		%	81.8	18.2	100		81.8	18.2	100				
	Aegean Region	n	13	1	14		13	1	14				
		%	92.9	7.1	100		92.9	7.1	100				
	South-eastern Anatolia	n	8	0	8		8	0	8				
		%	100	0	100		100	0	100				
	Central Anatolia	n	48	13	61		52	9	61				
		%	78.7	21.3	100		85.2	14.8	100				
	Black Sea	n	7	2	9		7	2	9				
		%	77.8	22.2	100		77.8	22.2	100				
	Marmara	n	57	19	76		57	19	76				
		%	75	25	100		75	25	100				
	Work place	State Hospital	n	26	6		32	Chi-square: 2.007 sd: 3 p:0.571	27		5	32	Chi-square: 5.363 sd: 3 p:0.147
			%	81.3	18.8		100		84.4		15.6	100	
Training and Research Hospital		n	34	5	39	28	11		39				
		%	87.2	12.8	100	71.8	28.2		100				
Private Hospital		n	68	21	89	78	11		89				
		%	76.4	23.6	100	87.6	12.4		100				
University Hospital		n	28	7	35	27	8		35				
		%	80	20	100	77.1	22.9		100				
		n	156	39	195	160	35		195				
		%	80	20	100	82.1	17.9		100				

Table 2. Preference of regional anaesthesia choice

		Definitely agree (1)	Agree (2)	No Idea (3)	Disagree (4)	Definitely do not agree (5)	Median
Safe technique	n	89	86	16	2	2	1.68
	%	45.6	44.1	8.2	1.0	1.0	
Less complications	n	77	87	15	11	5	1.87
	%	39.5	44.6	7.7	5.6	2.6	
Postoperative less sedation	n	105	69	14	3	4	1.63
	%	53.8	35.4	7.2	1.5	2.1	
Postoperative less analgesia requirement	n	105	64	16	9	1	1.65
	%	53.8	32.8	8.2	4.6	0.5	
Bleeding control is more easier	n	39	48	41	57	10	2.75
	%	20.0	24.6	21.0	29.2	5.1	
Less risk of thromboembolism	n	39	54	70	28	4	2.51
	%	20.0	27.7	35.9	14.4	2.1	
Less nausea and vomiting	n	50	86	21	27	11	2.30
	%	25.6	44.1	10.8	13.8	5.6	
Higher patient satisfaction	n	81	79	25	10	0	1.82
	%	41.5	40.5	12.8	5.1	0.0	

Table 3. Reasons not to prefer regional anaesthesia

		Definitely agree (1)	Agree (2)	No Idea (3)	Do not agree (4)	Definitely do not agree (5)	Median
Consciousness of patient and patient's speech create problems during surgery	n	15	45	46	48	41	3.28
	%	7.7	23.1	23.6	24.6	21.0	
Lead to anxiety in patients	n	30	64	42	43	16	2.75
	%	15.4	32.8	21.5	22.1	8.2	
Not enough muscle relaxation	n	31	58	43	45	18	2.80
	%	15.9	29.7	22.1	23.1	9.2	
Rare failure	n	37	80	42	24	12	2.46
	%	19.0	41.0	21.5	12.3	6.2	
Technique takes time	n	28	50	48	51	18	2.90
	%	14.4	25.6	24.6	26.2	9.2	

Anaesthesiologists, obstetricians, visual or/and printed media and contentment from previous surgical experiences usually influence the patient's choice of anaesthetic methods. In a study by Tekin et al. (5), information of patients who underwent caesarean section was determined. They reported that about half of all patients had regional anaesthesia, and the choice of anaesthesia method was affected by the anaesthesiologist more than obstetricians. Additionally, they reported that 30.35% of patients given regional anaesthesia were highly satisfied, and 57.3% was satisfied with the method (5). In another study, emergency surgical procedures were evaluated, and 44% of the patients rejected regional anaesthesia (7).

Kocamanoglu et al. (8) evaluated whether obstetricians prefer regional anaesthesia for both themselves and/or their relatives and reported a 77.3% acceptance rate, although the rate decreased to 18.2% if regional anaesthetic induction was done by obstetricians themselves. In the same study, the same question was asked to anaesthesiologists, and the acceptance rates were 82.5% and 62.5%, respectively.

A similar study reported that nearly half of the surgeons preferred regional anaesthesia for themselves, and almost the same percent of surgeons preferred regional anaesthesia for their patients. Additionally, in the same study, acceptance

rates of regional anaesthesia among anaesthesiologists were higher (9).

Akcaboy et al. (10) showed that 73.6% of orthopedicians prefer having regional anaesthetic induction during their knee arthroscopy; however, acceptance rates increased up to 90.6% for their patients.

In our study, preference rates of regional anaesthesia for caesarean section among both obstetricians and/or their relatives and their patients were 82.1% and 80%, respectively. We suggest that the study that was done in 2006 and evaluated surgeons' opinions of regional anaesthesia (9) should be updated and compared with previous studies. Personal acceptance rates of regional anaesthesia for orthopedicians and obstetricians were consistent with our study (10).

Maternal mortality risk is higher with general anaesthesia compared to regional anaesthesia (1). Most of the mortality is due to failure in airway management. Difficult intubation risk is increased 10-fold compared to nonpregnant women and is encountered in 1 of 250,000 pregnancies in general anaesthesia (11).

Akcaboy et al. (10) reported that 75% of the orthopedicians consider regional anaesthesia as a safe procedure; therefore, they prefer this anaesthetic induction (10). In our study, the ratio of obstetricians who defined regional anaesthesia as a safe procedure was higher than Akcaboy's study (Table 2). Although some complications, such as intraoperative hypotension and bradycardia, are encountered during regional anaesthesia, these complications may be corrected with adequate and appropriate interventions. Postspinal headache is another important complication of regional anaesthesia in obstetrics. It can be treated successfully with analgesics and volume replacement and epidural blood patch in case of requirement (11). American Board of Obstetrics and Gynecology advises regional anaesthesia due to increased relative mortality risk in general anaesthesia if there is no contraindication. In one study, Bernardo and colleagues concluded that local anaesthetics may rarely cause seizures, nerve damage, central nervous system infections and spinal and epidural hematomas (12).

In our study, most of the participants who prefer regional anaesthesia believe that regional anaesthesia has rare complications. In the literature, it was reported that less bleeding can be seen during regional anaesthesia (13). Besides this, in Akcaboy's study, 21.2% of orthopedicians preferred regional anaesthesia because of easier bleeding control (10). In our study, about half of the participating obstetricians think that regional anaesthesia provides easier bleeding control (Table 2).

Another important cause of maternal mortality is thromboembolism. Thromboembolism risk is doubled in caesarean section (14); 36.5% of orthopedicians preferred regional anaesthesia because of a lesser thromboembolism risk (10). Compared with this study, the higher ratio of obstetricians

in our study consider that regional anaesthesia leads to less thromboembolism risk.

Less postoperative sedation, lesser need for postoperative analgesia, higher patient satisfaction and decreased postoperative nausea and vomiting were other reasons of the participating obstetricians preferring regional anaesthesia (Table 2). Those rates were higher than the study that evaluated the opinion of orthopedicians (10).

Rare failure, patient anxiety from regional anaesthesia, inadequate muscle relaxation and time consumption were unfavourable features of regional anaesthesia that led to disapproval among the participants in our study. Consciousness of patients and speech of patients were not accepted as disadvantages by most of the participants (Table 3). A study reported that time consumption, patient anxiety from induction, consciousness of patients and, although rare, failure of inducing successful anaesthesia were the main reasons for disapproval of regional anaesthesia among orthopedicians (10).

On the other hand, general anaesthesia induction rates following unsuccessful regional anaesthesia were reported as 3.7% and 3% by two different studies (4, 6). Some obstetricians do not prefer regional anaesthesia due to the longer induction time. Besides this, Sungur et al. (15) evaluated the relationship between anaesthetic induction times and operation room usage times and reported that regional anaesthesia did not prolong operation room usage times.

Owing to exponential increase in obstetrical anaesthesia practices, regional anaesthesia rates for caesarean section are over 70% in many centres in Turkey (4, 6). Consistently, obstetricians in Turkey have increasingly started to prefer regional anaesthesia. The American Obstetrics and Gynecology Board advises that anaesthesiologists should be informed as early as possible if there is a patient with a high possibility of requiring a caesarean section, and general anaesthesia should be avoided if possible (2).

Conclusion

According to our study, obstetricians who support anaesthesiologists constantly for improvement of obstetrical anaesthesia consider that regional anaesthesia is a safe procedure and prefer this technique for both themselves and their relatives.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Erciyes University Clinical Research Ethics Committee (08.01.2013).

Informed Consent: Written informed consent was obtained from obstetricians who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - R.D., S.S.D.; Design - R.D., S.S.D.; Supervision - R.D., S.S.D.; Funding - R.D., S.S.D.; Ma-

terials - R.D., S.S.D.; Data Collection and/or Processing - R.D., S.S.D.; Analysis and/or Interpretation - R.D., S.S.D.; Literature Review - R.D., S.S.D.; Writer - R.D., S.S.D.; Critical Review - R.D., S.S.D.

Acknowledgements: We thanks to Dr. Hakan Bayır and Dr. İbrahim Dönmez from Ahi Evran University Training and Research Hospital for translation and critical review.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Etik Komite Onayı: Bu çalışma için etik komite onayı Erciyes Üniversitesi Klinik Araştırmalar Etik Kurulu'ndan (08.01.2013) alınmıştır.

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan obstetrisyenlerden alınmıştır.

Hakem Değerlendirmesi: Dış bağımsız.

Yazar Katkıları: Fikir - R.D., S.S.D.; Tasarım - R.D., S.S.D.; Denetleme - R.D., S.S.D.; Kaynaklar - R.D., S.S.D.; Malzemeler - R.D., S.S.D.; Veri toplanması ve/veya işleme - R.D., S.S.D.; Analiz ve/veya yorum - R.D., S.S.D.; Literatür taraması - R.D., S.S.D.; Yazıyı yazan - R.D., S.S.D.; Eleştirel İnceleme - R.D., S.S.D.

Teşekkür: Ahi Evran Üniversitesi Eğitim ve Araştırma Hastanesi'nden Dr. Hakan Bayır ve İbrahim Dönmez'e çeviri ve eleştirilerinden dolayı teşekkür ederiz.

Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Finansal Destek: Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

References

1. Hawkins JL, Koonin LM, Palmer SK, Gibbs CP. Anesthesia-related deaths during obstetric delivery in the United States, 1979-1990. *Anesthesiology* 1997; 86: 277-84. [CrossRef]
2. Şahin Ş, Owen MD. Türkiye'de ve dünyada obstetrik anestezi ve analjezi. *Ağrısız Doğum ve Sezaryende Anestezi*. 1. baskı. İstanbul; Nobel&Güneş; 2006; 1-8.
3. Töre G, Gurbet A, Şahin Ş, Türker G, Yavaşcaoğlu, Korkmaz S. Türkiye'de Obstetrik Anestezi Uygulamalarındaki Değişimin değerlendirilmesi. *Turk J Anaesth Reanim* 2009; 37: 86-95.
4. Gülhaş N, Şanlı M, Özgül Ü, Begeç Z, Durmuş M. Sezaryenlerde anestezi yönetimi: Retrospektif değerlendirme. *JJUMF* 2012; 19: 142-5. [CrossRef]
5. Tekin İ, Laçın S, Arıcan İ, Ok G. Sezaryen operasyonu geçirmiş olguların «anestezi yöntemi»nin seçimi üzerine etkileri. *Türkiye Klinikleri J Anest Reanim* 2005; 3: 1-6.
6. Tokar K, Yılmaz AS, Gürkan Y, Baykara N, Canatay H, Özdamar D, ve ark. Sezaryen ameliyatlarında anestezi uygulaması; 5 yıllık retrospektif değerlendirme. *TARCM* 2003; 31: 26-30.
7. Yıldırım GB, Çolakoğlu S, Bombacı E, Gül S. Acil kadın hastalıkları ve doğum ameliyatlarında anestezi uygulamalarımız. *Van Tıp Dergisi* 2006; 13: 56-60.
8. Kocamanoğlu İS, Sarıhasan B, Şener B, Tür A, Şahinoğlu H, Sunter T. Sezaryen operasyonlarında uygulanan anestezi yöntemleri ve komplikasyonları: 3552 olgunun retrospektif değerlendirilmesi. *Türkiye Klinikleri J Med Sci* 2005; 25: 810-6.
9. Aktekin A, Gandur MAD, Gürleyik G, Sağlam A. Cerrah ve anesteziistlerin kendileri ve hastaları için anestezi tercihleri. *Türk Aile Hek Derg* 2006; 10: 60-3.
10. Akçaboy EY, Akçaboy ZN, Ekren D, Göğüş N. Bir eğitim ve araştırma devlet hastanesinde ortopedistlerin rejyonal anestezi ile ilgili tutum ve bilgilerinin değerlendirilmesi. *Türkiye Klinikleri J Anest Reanim* 2009; 7: 143-7.
11. Göktuğ A, Özayar E, Oba Ş, Uysalel A. Sezaryen olgularında uygulanan rejyonal anestezi tekniklerinin yan etkilerinin sonuçları. *Turk J Anaesth Reanim* 2007; 35: 145-51.
12. Bernardo PD, Jenkins JG. Failed tracheal intubation in obstetrics: A 6-year review in the UK region. *Anesthesia* 2000; 55: 690. [CrossRef]
13. Andrews WW, Ramin SM, Maberry MC, Shearer V, Black S, Wallace DH. Effect of type of anesthesia on blood loss at elective repeat cesarean section. *Am J Perinatol* 1992; 9: 197-200. [CrossRef]
14. James AH, Jamison MG, Brancazio LR, Myers ER. Venous thromboembolism during pregnancy and the postpartum period: incidence, risk factors, and mortality. *Am J Obstet Gynecol* 2006; 194: 1311-5. [CrossRef]
15. Sungur MO, Havas F, Karadeniz M, Acar U, Altun D, Seyhan TÖ. Elektif sezaryen ameliyatlarında anestezi seçiminin ameliyat odası kullanım süresine etkisi: Spinal mi genel mi? *Turk J Anaesth Reanim* 2012; 40: 136-43. [CrossRef]