

Quality of internet-based information on obstetric anesthesia

Ahmet Yuksek, Gamze Talih

Bozok University, Faculty of Medicine, Department of Anesthesiology and Reanimation, Yozgat, Turkey

Copyright © 2019 by authors and Annals of Medical Research Publishing Inc.

Abstract

Aim: The internet is one of the most frequently used tools to reach up to actual information. In the field of health, patients frequently search for treatment options and outcomes over the internet. In this study, the quality and reliability of the data on obstetric anesthesia were investigated.

Material and Methods: The ten most frequently searched keywords for obstetric anesthesia and the first 30 search results for each word were analyzed with JAMA Benchmark Criteria and Discern score. The web sites that emerged as servers were divided into 5 classes as anesthesia associations and academic papers, public institutions, private hospitals/clinics, news and forums/personal blogs.

Results: The average DISCERN score of all sites was calculated as 29.75 ± 7.04 . The quality of the information provided on the internet about obstetric anesthesia was evaluated as poor. The most common results for our keywords were provided by private hospitals (27.8%). Web sites linked to public institutions were the last to provide information (2.2%). Treatment options and benefits are the most clearly mentioned issues, while risks and treatment failure are the least addressed. According to the JAMA benchmark criterion, the majority of sites had up-to-date but unclear information.

Conclusions: In obstetric anesthesia, the quality and reliability of the information provided on the internet are poor. It was concluded that the anesthesiology associations were not sufficiently involved on the internet in informing patients about obstetric anesthesia. Patients applying in health institutions should be advised that the information on the internet may not be reliable and that they should consult a specialist physician.

Keywords: Obstetric anesthesia; internet-based information; DISCERN score; JAMA Benchmark criteria

INTRODUCTION

Internet is one of the most frequently used tools for accessing current and fast information. Internet access rate in Turkey is explained by the Turkish Statistical Institute (TSI) as 80.7% in 2018 (1). Information provided over the Internet is not open to auditing, and being ranked first in the ranking list increases the reading rate. This broad source of information is used more and more frequently in the field of health. 68.8 percent of users with Internet access and 73.5 percent of women users have searched over the Internet in the field of health. In these searches, the most frequently, hospital appointments and information needs were highlighted (2). Obstetric anesthesia and analgesia are among the most frequently investigated subjects. Anesthesia associations and academic papers, public institutions, private hospitals/

clinics, news and forums/personal blogs may provide information about these topics. However, institutions providing the most frequent information, the accuracy or validity of the content has not yet been studied. Therefore, in this study, we aimed to test the quality and reliability of the information obtained from the internet on labor analgesia and cesarean anesthesia. Our secondary goal is to identify the issues that society needs to search for information about obstetric anesthesia.

MATERIAL and METHODS

Google (google.com) is the most frequently used search engine in Turkey with 91% market share (3). Google trend (trends.google.com) is a statistics website that shows the frequency of searches through "google.com" search engine. In this site, most frequently searched keywords

Received: 28.08.2019 **Accepted:** 22.10.2019 **Available online:** 09.01.2020

Corresponding Author: Gamze Talih, Bozok University, Faculty of Medicine, Department of Anesthesiology and Reanimation, Yozgat, Turkey, **E-mail:** mdayukse@hotmai.com

related to the searched keyword are demonstrated as 100 points and the least searched words are shown with 0 points (4).

The most sought-after 10 keywords identified by searching for anesthesia topics in "labor analgesia" and "anesthesia for cesarean section operations" on the internet via Google Trends.

After deleting search history, cookies, download history on the used computer, the first 30 sites examined from the displayed web sites by searching for each keyword individually. 300 websites were viewed in total. Video content sites, copy sites, and websites with unreachable content were excluded from the review. The searches in the search engine were done with Turkish characters and words. No ad site was seen on the first page for searches with keywords.

The web sites that emerged as servers were divided into 5 classes as anesthesia associations and academic papers, public institutions, private hospitals/clinics, news and forums/personal blogs.

In this study, the content and quality of the information on websites evaluated with JAMA Benchmark Criteria and DISCERN score. These review methods are used and recommended in previous publications as the most appropriate methods to measure the quality of information (5-7).

The JAMA Benchmark Criteria has 4 steps that question the author, citation, adequate description, and citation of content. Sources with an average score of 0 are unreliable in terms of information, while 4 points are considered as a source of quality and reliable information. The DISCERN score includes 16 questions that ask the content to contain acceptable information and explain treatment options. In order to make the test more acceptable, the results filled out by 2 researchers and the average of the results taken.

The DISCERN handbook classifies the websites as excellent (63-75), good (51-62), fair (39-50), poor (27-38) and very poor (15-26) according to their score (8).

With the resulting data and DISCERN and JAMA benchmark scores we tried to answer questions; which type of website provides most accurate or most frequent data for our topic, what is the quality of information and is there any information pollution. Also, the possible contributions of anesthesiologists and public institutions to inform better the public were discussed.

Statistical analysis; SPSS 22 software was used for all statistical analyses (SPSS Inc., Chicago, IL, USA). Data were described using number (%), mean Standard Deviation (SD), or median (minimum-maximum).

RESULTS

The 10 keywords identified through Google trends site on labor analgesia and anesthesia in cesarean operations were as follows; painless normal birth, epidural normal birth, birth with spinal anesthesia, cesarean section with

spinal anesthesia, cesarean section with numbness of waist, spinal or general, spinal anesthesia harms, post-anesthesia headache, post-spinal back pain, post-spinal paralysis. Half of these search terms (5/10) were related to complications. Three hundred websites were viewed in total. 73 of these sites were excluded because they met the exclusion criteria. A total number of 227 websites examined. Most frequently private hospitals and clinics (27.8%) and anesthesia associations and academic papers (26.4%) listed in results. These websites followed by forums/personal blogs (24.2%), news (19.4%). Public institutions (2.2%) were the least viewed websites. According to our keywords; categories of most frequently visited websites demonstrated at table 1.

Table 1. Categories of most frequently visited websites

Website category	Frequency	Percentage (%)
Anesthesia associations and academic papers	60	26.4
Public institutions	5	2.2
Private hospitals and clinics	63	27.8
News	44	19.4
Forums and personal blogs	55	24.2
Total	227	100.0

A total of 227 sites have been reviewed and some sites have all 4 JAMA criteria, while others have fewer criteria. Seventy percent of the sites examined posting or uploading date were available. However, two-thirds of the sites lacked author knowledge. Also, 28% of the sites had references and only 5% had disclosure statements. The ratio of websites that meet JAMA benchmark criteria is given in Table 2.

Table 2. JAMA Benchmark Criteria

JAMA Benchmarks	Number of websites (n=227) *	Percentage (%)
Authorship	67	29.5
Attribution of References	64	28.2
Currency	159	70
Disclosure	36	15.9

***; Some sites have all 4 JAMA criteria, while others have fewer criteria**

The average DISCERN score of all sites was calculated as 29.75 ± 7.04 . According to the discern handbook recommendation, the reliability and quality of internet-based information on obstetric anesthesia and analgesia was found to be poor (27-38). The lowest DISCERN score was 15 and maximum DISCERN score was 56. Although the average DISCERN scores of forums/personal blogs sites are higher, when the websites are analyzed by types, the average DISCERN score of each can be classified as "poor". Exceptionally, one blog site prepared by an academician was rated "good" with 56 points.

Anesthesia associations and academic papers had more JAMA Benchmark score according to website types. Forums and personal blogs had the lowest score. Most of the information on forum sited lacked of the source.

Comparison of website types according to quality with DISCERN score and meeting JAMA benchmark criteria are

shown in table 3. When discern questions were examined one by one, the benefits of treatment (2.96±1.2) or explanations of the procedure (2.96±1.5) were emphasized more clearly, while complications (1.31±0.7) and treatment failure (1.4±0.77) and source of data (1.17±0.6) were the least explained. DISCERN individual question scores demonstrated in Figure 1.

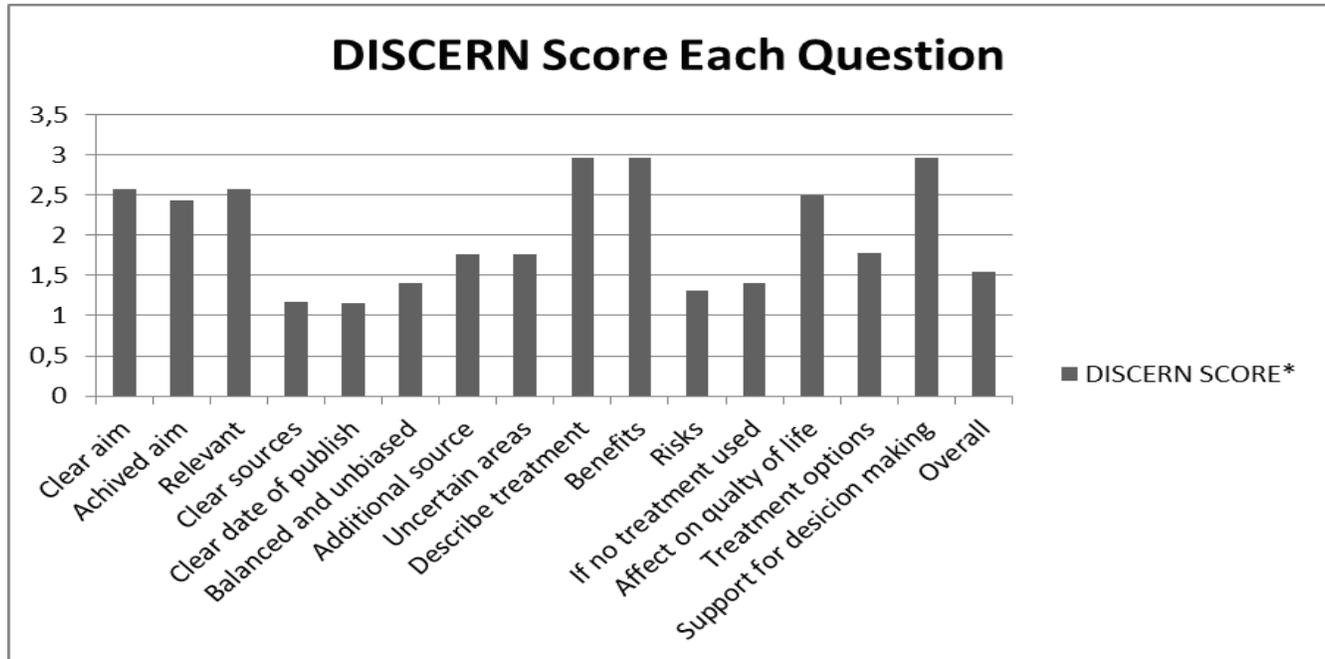


Figure 1. DISCERN individual question scores, DISCERN score ranged between 0-5

	Anesthesia associations and academic papers	Public institutions	Private hospitals and clinics	News	Forums and personal blogs	All categories
Number of sites with at least one false data	2	3	3	8	8	26
DISCERN score (mean SD)	24.46±5.80	29.6±2.60	29.77±4.59	30.2±6.10	35.14±7.44	29.75±7.04
(JAMA criteria (median min.-max.))	2.0(2-4)	2(1-3)	1(0-3)	2(0-3)	1(0-3)	2.0(0-4)

DISCUSSION

The Internet is a frequently used tool for acquiring information among patients. However, the reliability of this information is always debated. In this study, the websites about obstetric anesthesia were evaluated and it was seen that patients were more curious about the complications of anesthesia. Although, it was seen that the information obtained through the internet was not reliable. Anesthesia and its effects are not well known by the society and the quality of information on the internet has not been questioned sufficiently yet.

The data obtained over the Internet are mostly articles whose author, date and source are not known. Most of

them are manufactured by private hospitals with a high copy data rate.

In this study, the most frequent private hospitals with a total of 27.8% come to the results screen. It is not known whether their goal is to inform the community or to attract more patients. Nevertheless, private hospitals seem to understand the importance of the internet. While private hospitals provide information on techniques and benefits, forum sites provide information on complications. According to JAMA Benchmark scores, the most reliable data were provided by anesthesia associations or academic papers, public institutions and private hospitals/clinics, respectively. However, forum/ personal blogs sites seem unreliable. The percentage of

false data on complications is higher than other titles. The most common misinformation was on forum sites and news sites. The community should be informed that information on forum sites may be written by non-health professionals and may not be accurate. The most organized institution in anesthesiology and reanimation Turkey is Turkish society of anesthesiology and reanimation (TSAR). However, the TSAR website only displayed four times in the search results and two of the results were viewed as guidelines for academic purposes (9). It is clear that anesthesia institutions should take more roles in order to enlighten the society and patients. In this study, about one-third of the sites on the results screen were anesthesia associations or academic papers. Although the information contained in these sites is more reliable, they are difficult to understand by the community.

In a study conducted by Weiss et al. about difficulties of using internet, in the field of labor analgesia, it was evaluated with Flesch Reading Ease Score (FRESH) and Minervation validation tool for healthcare websites (LIDA) and it was concluded that academic and non-academic sites in their own language were difficult for patients to read and understand (10). In a study advocating the benefits of internet use, Kothari M. and Moolani S. found that internet research increases the knowledge level of patients and stated that they should be encouraged in this regard (11). Even if internet-based information collection is beneficial for patients, the importance of expert opinion is still up to date in order to prevent information pollution.

The limitation of our research is to examine only the first 30 results and 300 websites. It does not seem possible to review all information or all search words on the Internet.

CONCLUSION

In obstetric anesthesia, the quality of the information provided on the internet is poor. It should be emphasized that the data obtained over the internet is not completely accurate and the necessity of obtaining an expert opinion. Most of the information about obstetric anesthesia and analgesia is provided by private hospitals. Anesthesia associations do not use the internet enough to enlighten the society. These institutions should provide more viewable information on the internet, especially in order to reduce incorrect information. Training for obtaining correct information can be given to patients who apply to health institutions.

Competing interests: All of the authors of this manuscript declared that there is no conflict of interest.

Financial Disclosure: There are no financial supports.

Ethical approval: This study was approved by the Medical Researches Ethics Committee of Bozok University (2017-KAEK-189_2019.08.07_05) in accordance with the Helsinki Declaration.

Ahmet Yuksek ORCID: 0000-0002-7529-2971

Gamze Talih ORCID: 0000-0003-4743-9734

REFERENCES

1. İstatistiksel Tablolar ve Dinamik Sorgulama. Sabit Telefon, Cep Telefonu ve İnternet Abone Sayısı. http://www.tuik.gov.tr/VeriBilgi.do?alt_id=1062 access date 22.07.2019
2. İstatistiksel Tablolar/ İnternet Kullanan Bireylerin İnterneti Kişisel Kullanma Amaçları. http://www.tuik.gov.tr/VeriBilgi.do?alt_id=1028 access date 22.07.2019
3. Google.com search engine market share in Turkey. <http://gs.statcounter.com/search-engine-market-share/all/turkey> access date 22.07.2019
4. Cervellin G, Comelli I, Lippi G. Is Google Trends a reliable tool for digital epidemiology? Insights from different clinical settings. *J Epidemiol Glob Health* 2017;7:185-9.
5. Kaicker J, Dang W, Mondal T. Assessing the quality and reliability of health information on ERCP using the DISCERN instrument. *Health Care Curr Rev* 2013;1:1.
6. Kaicker J, Debono VB, Dang W, Buckley N, Thabane L. Assessment of the quality and variability of health information on chronic pain websites using the DISCERN instrument. *BMC Med* 2010;8:59.
7. O'Neill SC, Baker JF, Fitzgerald C, et al. Cauda equina syndrome: assessing the readability and quality of patient information on the Internet. *Spine* 2014;39:645-9.
8. Charnock D. *The DISCERN Handbook: Quality criteria for consumer health information on treatment choices.* Radcliffe: University of Oxford and The British Library 1998.
9. Turkish Society of Anesthesia and Reanimation. *Neuraxial Anesthesia for Caesarean Surgeries Guideline.* <https://www.tard.org.tr/assets/kilavuz/16.pdf> access date 22.07.2019.
10. Weiss MA, Junior LDS, Bliacheriene F, et al. What does the Internet teach the obstetric patient about labor analgesia? *Rev Bras Anestesiol* 2018;68:254-9.
11. Kothari M, Moolani S. Reliability of "Google" for obtaining medical information. *Indian J Ophthalmol* 2015;63:267-9.