

Original Article

Determining Score and Comparing Knowledge of Medical Interns about Testicular Torsion

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HIGHLIGHTS

- The occurrence of testicular torsion is sudden and may lead to the loss of the testicle.
- The findings of study showed that the medical students who completed the urology course during the externship have a higher level of knowledge about testicular torsion.

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ABSTRACT

Introduction

Torsion of the testicle is one of the most common emergencies in urology, and being aware of its symptoms can lead to timely diagnosis and appropriate treatment. In case of insufficient fixation or the absence of fixation, the testicle twists around the spermatic axis of the cord and causes ischemia due to interruption of venous and arterial blood flow to the testicle. The occurrence of testicular torsion is sudden and may lead to the loss of the testicle.

Methods

This study is a cross-sectional study that was conducted in 1401 on medical interns entering Mehr 1394 of Isfahan University of Medical Sciences. The inclusion criteria included: studying in the medical internship course at Isfahan University of Medical Sciences and entering the month of 2014. Also, medical interns who did not want to participate in this study were not included in the study, and people who provided incomplete answers or selected multiple options for a question in the questionnaire and did not answer more than 20% of the questions in total were excluded from the study.

Results

Of the 133 students examined, 14 (10.5%) had excellent knowledge, 34 (25.6%) had good knowledge, 51 (38.3%) had average knowledge, and 34 (25.6%) had poor knowledge. They were about testicular torsion. The students who passed the urology course in the external course had a higher level of knowledge than the students who did not pass that unit, so the percentage of people with a high level of knowledge (score 17-20) in the urology group was 18.6 percent. And in the neurosurgery group, it was 1.6%. Also, the percentage of people with favorable information in the above two groups was 45.7 and 3.2 percent, respectively (P-value<0.001).

Conclusions

The findings of the present study showed that the medical students who completed the urology course during the externship have a higher level of knowledge about testicular torsion than the students who completed the neurosurgery course.

Keywords: Testicular Torsion; Awareness; Internship

Introduction

Torsion of the testicle is one of the most common emergencies in urology, and being aware of its symptoms can lead to timely diagnosis and appropriate treatment.

The incidence of torsion has been recorded in different references between 3.8 per hundred thousand and 4.5 per hundred thousand people (1).

This event happens due to the insufficient fixation of

the lower pole of the testicle to the tunica vaginalis. In case of insufficient fixation or the absence of fixation, the testicle twists around the spermatic axis of the cord and causes ischemia due to interruption of venous and arterial blood flow to the testicle. The occurrence of testicular torsion is sudden and may lead to the loss of the testicle (2). Torsion has been associated with a negative effect on spermatogenic events in half of the cases (3).

Since 2016, the urology department has been removed from the internship stage and transferred to the externship stage (internship 2). One of the problems following this decision is the lack of a therapeutic approach for external students, which limits professors in teaching therapeutic approaches to students. Also, with this decision, every year only half of the external students are required to pass the urology section and the other half have the neurosurgery section in their educational program. These cases may affect the knowledge about treatment approaches in general medicine graduates. One of the most common urological diseases is testicular torsion. Therefore, in this study, we decided to examine the awareness of medical interns of Isfahan University of Medical Sciences entering September 2014 about testicular torsion and then compare the awareness score of the interns who completed the urology department during the externship course with the awareness score. We compare interns who did not go through the urology department during their externship. The higher the score, the higher the knowledge.

Methods

This study is a cross-sectional study that was conducted in 2022 on medical interns entering September 2014 at Isfahan University of Medical Sciences.

The inclusion criteria included: studying in the medical internship course of Isfahan University of Medical Sciences and entering the month of 2014. Also, medical interns who did not want to participate in this study were not included in the study, and people who provided incomplete answers or selected multiple options for a question in the questionnaire and did not answer more than 20% of the questions in total were excluded from the study. This study was approved by the ethics committee of Isfahan University of Medical Sciences (IR.MUI.MED.REC.1402.078), Isfahan, Iran.

The sampling was based on a census and included all medical interns who entered Isfahan University of Medical Sciences in September 2014, 70 students who completed the Urology Department during the externship course, and 63 students who did not complete the Urology Department during the externship course, were included in the study.

The data collection tool in this research was a questionnaire. This questionnaire was created by a researcher and professors of the Urology Department participated in its preparation. This questionnaire

included 3 questions to determine gender, grade point average, passing or not passing the Urology Department in the external course, as well as 10 four-choice questions regarding testicular torsion. For each of the four-choice questions, 1 point was given in case of correct answer and 0 point in case of wrong answer.

The higher the score, the higher the knowledge. For a better understanding of the evaluation score, each person's scores are calculated based on 20 and in the classification of scores, a score higher than 17 is considered an excellent information level, 15.1-17 as a favorable information level, 12-15 as an average information level and lower scores. of 12 was considered a poor information level. Finally, the obtained score was converted into a percentage.

Question 1 of the questionnaire about the epidemiology of testicular torsion, questions 2 and 3 about the symptoms of testicular torsion, questions 4-7 about examination and diagnostic procedures for testicular torsion, questions 8 and 9 about appropriate treatment for testicular torsion and question 10 about diagnosis. An important difference is testicular torsion.

To check the reliability, first, the questionnaire was given to 20 interns of Isfahan University of Medical Sciences, and the answers were collected. Then, after two weeks, the questionnaire was given to the same 20 interns again, and the answers were collected again, and the scores obtained from the two tests were analyzed and their correlation coefficient was calculated. Cronbach's alpha coefficient was also examined to measure the reliability of the questionnaire.

To check the validity of the questionnaire, 13 faculty members of the Urology Department and students of Isfahan University of Medical Sciences were provided to check the questions. The opinions of urology specialists were used to evaluate the content validity of the questionnaire. For this purpose, two qualitative and quantitative methods were considered. In the qualitative review of the content, the professors of urology were requested to provide the necessary feedback related to the questionnaire, based on which the necessary corrections were made.

To check content validity quantitatively, two relative coefficients of content validity (CVR) and content validity index (CVI) were used. CVI was calculated as the sum of agreeable points (including the two options "relevant but needs revision" and "completely relevant") divided by the total number of experts. If the CVI score is higher than 0.79, the content validity of the scale is confirmed.

To determine CVR, the three-part spectrum "necessary", "useful but not necessary" and "not necessary" was used and the answers were calculated according to the following formula. In this formula, N is the total number of experts and n is the number of experts

who have chosen the necessary subject.

The study data was finally entered into SPSS version 26 software and analyzed with Pearson's correlation, Cronbach's alpha, chi-square, T-test, and one-way analysis of variance tests.

Results

Percentage of professors' opinions regarding the necessity of questions related to testicular torsion and the value of the CVR index. Since the value of CVR for all questions is higher than 0.29, the necessity of all 10 questions was confirmed.

The questionnaire was prepared after obtaining the required validity and reliability (in the review of 20 initial questionnaires that were completed by interns, Cronbach's alpha was 0.92 and according to that, the questionnaire had good reliability), by 133 medical interns entering the University of Medical Sciences in 2014. Isfahan was completed, 70 people (52.6%) completed the urology course and 63 people (47.4%) did not complete the mentioned course and proceeded to undergo the neurosurgery course.

Of the two groups, 30 and 24 were male (42.9% versus 38.1%), respectively, and the rest of them were female, and there was no significant difference between the two groups (P -value=0.58). The order was 16.09 ± 0.63 and 16.05 ± 0.84 and no significant difference was seen between the two groups (P -value=0.76).

The average total evaluation score of the studied students was 13.1 ± 3.21 with a range of 4-18 from the maximum score of 20. This average was 10.83 ± 2.8 in the neurosurgery group and 15.14 ± 2.30 in the urology group, and according to the T-test, the students who completed the urology course had a significantly higher average score (P -value<0.001).

Of the 133 students examined, 14 (10.5%) had excellent knowledge, 34 (25.6%) had good knowledge, 51 (38.3%) had average knowledge, and 34 (25.6%) had poor knowledge. They were about testicular torsion. The students who passed the urology course in the external course had a higher level of knowledge than the students who did not pass that unit, so the percentage of people with a high level of knowledge (score 17-20) in the urology group was 18.6 percent. And in the neurosurgery group, it was 1.6%. Also, the percentage of people with favorable information in the above two groups was 45.7 and 3.2 percent, respectively. (P -value<0.001).

The average score of the students in the three areas of symptoms, diagnosis, and treatment of testicular torsion was 5.32 ± 1.82 , 5.13 ± 1.83 , and 2.65 ± 1.34 of the maximum score of 8, 8, and 4, respectively. The percentage of scores obtained in the three mentioned areas was 66.54 ± 22.8 , 64.1 ± 22.9 , and 66.17 ± 33.5 percent, respectively. According to the T-test, the average score of the students who took the urology course was higher in all

areas (P -value<0.001).

The frequency distribution of healthy answers to questions 1 (the most common age range of torsion), 4 (what is the position of the testis in the examination?), 7 (the first and best diagnostic modality of testicular torsion), 9 (suitable treatment for a patient with torsion) testicle) and 10 (the most important differential diagnosis of testicular torsion) had a significant difference between the two groups and the rate of correct answers was higher in the urology group.

Discussion

The findings of this study showed that the medical interns who completed the urology course during the externship had a higher level of awareness about testicular torsion than the students who completed the neurosurgery course.

In this regard, although a similar study has not been conducted so far that has investigated the level of awareness about testicular torsion based on whether or not a urology course has been completed, in a similar study conducted by Dr. Kazemi and colleagues in 2022 Then, the level of knowledge of the students of these two groups about renal colic was investigated and the results similar to the results of the present study were obtained and the students who completed the urology course had a higher level of knowledge.

In a study conducted by Forsythe et al., on 50 medical students in England in 2014, their level of awareness in the field of urology was evaluated as unfavorable and it was concluded that due to the high number of patients with renal colic, medical students need to increase They have the level of awareness and development of education in the field of urological diseases (4).

In the study of Patel et al., the level of awareness of 108 medical students of a hospital was investigated before and after the mandatory rotation of urology, the results of the study showed that the mandatory rotation of urology led to better management of patients, increased interest in the subject of urology, and increased skill in The field of diagnosis and treatment of urology patients and seeks a good experience for students (5).

The results of a study conducted by Amjadi et al., under the title of surveying the level of knowledge of general practitioners about common urological practices and interventions, a questionnaire in the field of bladder cancer, circumcision, kidney tumor, prostate diseases, urinary infections, testicular diseases, and kidney and ureter stones. Prepared and sent online to 165 doctors. 75.7% of the participants in the project were medical graduates and the rest were trainee doctors. The level of knowledge of the studied subjects in the field of bladder cancer was 65.87%, circumcision 65.5%, kidney tumor 48.25%, prostate 55.63%, urinary infection 57%, testicular diseases 55.62%, and kidney and ureteral stones 6.43%. In this study, it has been concluded that the

level of knowledge of general physicians about common urological diseases in this study is 58.75% in total, which indicates that doctors master half of the common urological diseases (6).

Based on the findings of the present study, the level of awareness of the students who completed the urology course was higher in the three areas of symptoms, diagnosis, and treatment. Therefore, considering the high prevalence and importance of testicular torsion and the need for its correct management and emergency treatment, it seems that it is necessary for all medical students during urology.

On the other hand, the level of unfavorable awareness in the field of urological diseases has a negative impact on the quality of medical services of doctors after graduation, and lives may be lost due to wrong diagnoses and ignoring the signs and symptoms of diseases that require immediate and timely treatment. Patients are at risk.

CVI Content validity index
CVR Content validity relative

Conclusions

The findings of the present study showed that the medical students who completed the urology course during the externship have a higher level of knowledge about testicular torsion than the students who completed the neurosurgery course. Therefore, considering the importance of early diagnosis of testicular torsion and the need for emergency intervention, it seems that it is necessary for all medical students during urology.

Authors' contributions

HS wrote the paper. RK and MM treated the patients. RK and MGH followed the patients. RK and HS, reviewed samples. MGH and MM searched the Literature; RK collected and processed the Data; RK and MM helped in writing the draft. All authors read and signed the final paper.

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Not Applicable.

Conflict of interest

All authors declare that there is no conflict of interest.

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Ethics statement

This study was approved by the ethics committee of Isfahan University of Medical Sciences (IR.MUI.MED.REC.1402.078), Isfahan, Iran.

Data availability

Data will be provided on request.

Abbreviations

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