ABOUT JCMR

The Journal of Clinical Medicine and Research (JCMR) is published monthly (one volume per year) by Academic Journals.

Journal of Clinical Medicine and Research (JCMR) is an open access journal that provides rapid publication (monthly) of articles in all areas of the subject such as cardiology, critical care medicine, Family Medicine, geriatrics, pediatrics etc.

The Journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence. Papers will be published shortly after acceptance. All articles published in JCMR are peer-reviewed.

Submission of Manuscript

Submit manuscripts as e-mail attachment to the Editorial Office at: jcmr@academicjournals.org. A manuscript number will be mailed to the corresponding author shortly after submission.

For all other correspondence that cannot be sent by e-mail, please contact the editorial office (at jcmr@academicjournals.org).

The Journal of Clinical Medicine and Research will only accept manuscripts submitted as e-mail attachments.

Please read the Instructions for Authors before submitting your manuscript. The manuscript files should be given the last name of the first author.
Editors

Prof. Neveen Helmy Ahmed Aboelsoud,
Complementary Medicine Researches &
Applications (CAM),
National Research Center,
Research St (Tahrir),
Dokki, Cairo,
Egypt.

Prof. Bodh Raj Panhotra,
Department of Medical Microbiology,
Medical Laboratory Technology & Clinical Sciences,
Sardar Bhagwan Singh Postgraduate Institute of
Biomedical Sciences & Research,
Balawala, Dehradun,
India.

Editorial Board

Prof. Ahmed BaHammam,
King Saud University,
Saudi Arabia.

Dr. Ellen Rosskam,
Senior Scholar, Woodrow Wilson International Center for
Scholars,
Washington, D.C.,
Adjunct Professor, University of Massachusetts, Lowell,
Visiting Senior Fellow, University of Surrey,
Faculty of Health and Medical Sciences, England,
Switzerland.

Dr. Philippe Connes,
National Institute of Health and Medical Research (763),
Academic Hospital of Pointe a Pitre,
Guadeloupe (French West Indies),
Guadeloupe.

Dr. Robert G Bota,
University of Missouri,
Kansas City,
USA.

Dr. Haiyang Zhou,
Department of General Surgery,
Changzheng Hospital,
Second Military Medical University,
China.

Dr. Jimmy Jose,
SAC College of Pharmacy, Karnataka,
India.

Dr. Carlos A. Feldstein,
Hospital de Clinicas Jose de San Martin,
Av. Cordoba 2351 Buenos Aires 1120,
Argentina.

Dr. Fadia Mostafa Attia,
Faculty of Medicine,
Suez Canal University,
Egypt.

Dr. Hamza Mujagic,
Massachusetts General Hospital,
USA.

Dr. O.U.J. Umeora,
Ebonyi State University/Teaching Hospital,
Nigeria.
Electronic submission of manuscripts is strongly encouraged, provided that the text, tables, and figures are included in a single Microsoft Word file (preferably in Arial font).

The cover letter should include the corresponding author’s full address and telephone/fax numbers and should be in an e-mail message sent to the Editor, with the file, whose name should begin with the first author’s surname, as an attachment.

Article Types
Three types of manuscripts may be submitted:

Regular articles: These should describe new and carefully confirmed findings, and experimental procedures should be given in sufficient detail for others to verify the work. The length of a full paper should be the minimum required to describe and interpret the work clearly.

Short Communications: A Short Communication is suitable for recording the results of complete small investigations or giving details of new models or hypotheses, innovative methods, techniques or apparatus. The style of main sections need not conform to that of full-length papers. Short communications are 2 to 4 printed pages (about 6 to 12 manuscript pages) in length.

Reviews: Submissions of reviews and perspectives covering topics of current interest are welcome and encouraged. Reviews should be concise and no longer than 4-6 printed pages (about 12 to 18 manuscript pages). Reviews are also peer-reviewed.

Review Process
All manuscripts are reviewed by an editor and members of the Editorial Board or qualified outside reviewers. Authors cannot nominate reviewers. Only reviewers randomly selected from our database with specialization in the subject area will be contacted to evaluate the manuscripts. The process will be blind review. Decisions will be made as rapidly as possible, and the journal strives to return reviewers’ comments to authors as fast as possible. The editorial board will re-review manuscripts that are accepted pending revision. It is the goal of the JCMR to publish manuscripts within weeks after submission.

Regular articles
All portions of the manuscript must be typed double-spaced and all pages numbered starting from the title page.

The Title should be a brief phrase describing the contents of the paper. The Title Page should include the authors’ full names and affiliations, the name of the corresponding author along with phone, fax and E-mail information. Present addresses of authors should appear as a footnote.

The Abstract should be informative and completely self-explanatory, briefly present the topic, state the scope of the experiments, indicate significant data, and point out major findings and conclusions. The Abstract should be 100 to 200 words in length. Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. Standard nomenclature should be used and abbreviations should be avoided. No literature should be cited. Following the abstract, about 3 to 10 key words that will provide indexing references should be listed.

A list of non-standard Abbreviations should be added. In general, non-standard abbreviations should be used only when the full term is very long and used often. Each abbreviation should be spelled out and introduced in parentheses the first time it is used in the text. Only recommended SI units should be used. Authors should use the solidus presentation (mg/ml). Standard abbreviations (such as ATP and DNA) need not be defined.

The Introduction should provide a clear statement of the problem, the relevant literature on the subject, and the proposed approach or solution. It should be understandable to colleagues from a broad range of scientific disciplines.

Materials and methods should be complete enough to allow experiments to be reproduced. However, only truly new procedures should be described in detail; previously published procedures should be cited, and important modifications of published procedures should be mentioned briefly. Capitalize trade names and include the manufacturer’s name and address. Subheadings should be used. Methods in general use need not be described in detail.
**Results** should be presented with clarity and precision. The results should be written in the past tense when describing findings in the authors' experiments. Previously published findings should be written in the present tense. Results should be explained, but largely without referring to the literature. Discussion, speculation and detailed interpretation of data should not be included in the Results but should be put into the Discussion section.

The **Discussion** should interpret the findings in view of the results obtained in this and in past studies on this topic. State the conclusions in a few sentences at the end of the paper. The Results and Discussion sections can include subheadings, and when appropriate, both sections can be combined.

The **Acknowledgments** of people, grants, funds, etc. should be brief.

**Tables** should be kept to a minimum and be designed to be as simple as possible. Tables are to be typed double-spaced throughout, including headings and footnotes. Each table should be on a separate page, numbered consecutively in Arabic numerals and supplied with a heading and a legend. Tables should be self-explanatory without reference to the text. The details of the methods used in the experiments should preferably be described in the legend instead of in the text. The same data should not be presented in both table and graph form or repeated in the text.

**Figure legends** should be typed in numerical order on a separate sheet. Graphics should be prepared using applications capable of generating high resolution GIF, TIFF, JPEG or Powerpoint before pasting in the Microsoft Word manuscript file. Tables should be prepared in Microsoft Word. Use Arabic numerals to designate figures and upper case letters for their parts (Figure 1). Begin each legend with a title and include sufficient description so that the figure is understandable without reading the text of the manuscript. Information given in legends should not be repeated in the text.

**References:** In the text, a reference identified by means of an author's name should be followed by the date of the reference in parentheses. When there are more than two authors, only the first author’s name should be mentioned, followed by ‘et al’. In the event that an author cited has had two or more works published during the same year, the reference, both in the text and in the reference list, should be identified by a lower case letter like ‘a’ and ‘b’ after the date to distinguish the works.

Examples:

- Nishimura (2000), Agindotan et al. (2003), (Kelebeni, 1983), (Usman and Smith, 2001), (Chege, 1998; Stein, 1987a,b; Tijani, 1993,1995), (Kumasi et al., 2001)

References should be listed at the end of the paper in alphabetical order. Articles in preparation or articles submitted for publication, unpublished observations, personal communications, etc. should not be included in the reference list but should only be mentioned in the article text (e.g., A. Kingori, University of Nairobi, Kenya, personal communication). Journal names are abbreviated according to Chemical Abstracts. Authors are fully responsible for the accuracy of the references.

Examples:


Case Studies

Case Studies include original case reports that will deepen the understanding of general medical knowledge.

The Title should be a brief phrase describing the contents of the paper. The Title Page should include the authors' full names and affiliations, the name of the corresponding author along with phone, fax and E-mail information. Present addresses of authors should appear as a footnote.

The Abstract should be informative and completely self-explanatory, briefly present the topic, state the scope of the experiments, indicate significant data, and point out major findings and conclusions. The Abstract should be 100 to 200 words in length. Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. Standard nomenclature should be used and abbreviations should be avoided. No literature should be cited.

Following the abstract, about 3 to 10 key words that will provide indexing references should be listed.

A list of non-standard Abbreviations should be added. In general, non-standard abbreviations should be used only when the full term is very long and used often. Each abbreviation should be spelled out and introduced in parentheses the first time it is used in the text. Only recommended SI units should be used. Authors should use the solidus presentation (mg/ml).

The Introduction should provide a clear statement of the problem, the relevant literature on the subject, and the proposed approach or solution. It should be understandable to colleagues from a broad range of scientific disciplines. The presentation of the case study should include the important information regarding the case. This must include the medical history, demographics, symptoms, tests etc. Kindly note that all information that will lead to the identification of the particular patient(s) must be excluded.

The conclusion should highlight the contribution of the study and its relevance in general medical knowledge.

The Acknowledgments of people, grants, funds, etc should be brief.

References: Same as in regular articles.

---

Short Communications

Short Communications are limited to a maximum of two figures and one table. They should present a complete study that is more limited in scope than is found in full-length papers. The items of manuscript preparation listed above apply to Short Communications with the following differences: (1) Abstracts are limited to 100 words; (2) instead of a separate Materials and Methods section, experimental procedures may be incorporated into Figure Legends and Table footnotes; (3) Results and Discussion should be combined into a single section.

Proofs and Reprints: Electronic proofs will be sent (e-mail attachment) to the corresponding author as a PDF file. Page proofs are considered to be the final version of the manuscript. With the exception of typographical or minor clerical errors, no changes will be made in the manuscript at the proof stage. Because IJMMS will be published freely online to attract a wide audience, authors will have free electronic access to the full text (in both HTML and PDF) of the article. Authors can freely download the PDF file from which they can print unlimited copies of their articles.
**Fees and Charges**: Authors are required to pay a $550 handling fee. Publication of an article in the Journal of Clinical Medicine and Research is not contingent upon the author's ability to pay the charges. Neither is acceptance to pay the handling fee a guarantee that the paper will be accepted for publication. Authors may still request (in advance) that the editorial office waive some of the handling fee under special circumstances.

**Copyright**: © 2013, Academic Journals. All rights Reserved. In accessing this journal, you agree that you will access the contents for your own personal use but not for any commercial use. Any use and or copies of this Journal in whole or in part must include the customary bibliographic citation, including author attribution, date and article title.

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, or thesis) that it is not under consideration for publication elsewhere; that if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher.

**Disclaimer of Warranties**

In no event shall Academic Journals be liable for any special, incidental, indirect, or consequential damages of any kind arising out of or in connection with the use of the articles or other material derived from the JCMR, whether or not advised of the possibility of damage, and on any theory of liability.

This publication is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications does not imply endorsement of that product or publication.

While every effort is made by Academic Journals to see that no inaccurate or misleading data, opinion or statements appear in this publication, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor or advertiser concerned. Academic Journals makes no warranty of any kind, either express or implied, regarding the quality, accuracy, availability, or validity of the data or information in this publication or of any other publication to which it may be linked.
# Articles

**Research Articles**

**Comparison of single-incision mid-urethral tape (Ophira™) and transobturator tape (Obtryx™) sub-urethral sling procedures for female stress urinary incontinence**  
P. P. Smith, R. K. Dhillon, M. Baptiste and A. S. Arunkalaivanan  

**A useful biomarker in talar osteochondral disease activity: Mean platelet volume (MPV)**  
Ibrahim Karaman*, Ahmet Guney, Emre Yurdakul, Mithat Oner and Ibrahim Halil Kafadar
Full Length Research Paper

Comparison of single-incision mid-urethral tape (Ophira™) and transobturator tape (Obtryx™) sub-urethral sling procedures for female stress urinary incontinence

P. P. Smith¹, R. K. Dhillon¹, M. Baptiste² and A. S. Arunkalaivanan²*

¹Academic Department Birmingham Women's Hospital, 3rd Floor, Mindelsohn Way, Edgbaston, United Kingdom, B15 2TG, UK.
²City Hospital, Dudley Road, Birmingham, United Kingdom, B18 7QH, UK.

Accepted 4 July, 2013

This non-randomised study prospectively compared clinical efficacy and patient satisfaction of single-incision mid-urethral tape (Ophira™) against transobturator tape (Obtryx™). Objective cure rates were defined at 12 months follow-up as negative cough stress test and subjective cure was assessed by patient perception of improved symptoms, using the International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) questionnaire. Thirty patients received the Ophira, 29 (93.3%) reported significantly improved symptoms and 27 (90%) had a negative cough stress test. Thirty-one patients received the Obtryx, 29 (93.5%) reported significantly improved symptoms and 29 (93.5%) had a negative cough stress test. Twelve month follow up showed the procedures were comparable in objective and subjective cure rates.

Key words: Transobturator tape (TOT) procedure, mini-sling, stress urinary incontinence (SUI).

INTRODUCTION

Urinary incontinence is a common complaint causing suffering and embarrassment as well as significant costs to women and societies around the world (Department of Health, Modernising Health and Social Services, 1999-2002). It has been estimated that between 10 to 40% of adult women suffer from urinary incontinence, of these 3 to 17% are considered severe (Hunskaar et al., 2000). Stress urinary incontinence (SUI) is the most common type and is defined as the complaint of involuntary urine leakage on effort, or exertion, or on sneezing, or coughing, without a rise in detrusor pressure (Haylen et al., 2010). It is thought to be caused by 2 mechanisms (Petros and Woodman, 2008):

1) Hyper-mobility or significant displacement of the urethra and bladder neck during exertion.
2) Intrinsic urethral sphincter deficiency.

Tension-free vaginal tape (TVT) procedure has been the standard minimally invasive treatment for SUI since 1995, when it was first described by (Ulmsten and Pteros, 1995; Delorme 2001), used the 'outside-in' technique of a transobturator route for suburethral tape placement, the transobturator tape (TOT) procedure (Delorme, 2001). This technique reduced the risk of bladder perforation and injuries to the bowels and large vessels compared with TVT. The cure rates of both procedures were similar, ranging from 90 to 95% (Ulmsten et al., 1999). Despite its improved safety profile and excellent cure rates, the procedure still involves passing needles through the
Table 1. Baseline characteristics.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ophira™ (30)</th>
<th>Obtryx™ (31)</th>
<th>P* value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>57.1±13.3</td>
<td>52.7±9.1</td>
<td>0.26</td>
</tr>
<tr>
<td>Parity</td>
<td>3±1.6</td>
<td>2.8±1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Pre-op cough stress test (CST)+ve</td>
<td>22 (73.6%)</td>
<td>24 (77.4%)</td>
<td>0.55</td>
</tr>
<tr>
<td>USI</td>
<td>16 (53.3%)</td>
<td>17 (54.8%)</td>
<td>0.57</td>
</tr>
<tr>
<td>Pure SUI</td>
<td>11 (36.7%)</td>
<td>8 (25.8%)</td>
<td>0.18</td>
</tr>
<tr>
<td>MUI</td>
<td>3 (10%)</td>
<td>5 (16.1%)</td>
<td>0.57</td>
</tr>
</tbody>
</table>

CST, cough stress test; UDSUI, urodynamic stress incontinence; SUI, stress urinary incontinence; MUI, mixed urinary incontinence. * Chi-Square test.

groin, which in certain patients can result in groin pain (Lattice et al., 2007). Although the risk is very low, especially with the outside-in approach like the TOT tape, the risk still exists.

Various single-incision mid-urethral tapes involving only one incision in the vagina and no needle passages through the abdomen or groin have been developed (Deole et al., 2011; Abdel-Fattah et al., 2012; Barber et al., 2012; Sivaslioglu et al., 2012). A study that compared primary fixation of five different mini slings and one polypropylene mesh showed that the Ophira™ mini sling system presented the best fixation in Wister rats (Palma et al., 2012). However, it is important that we must critically evaluate these technologies in daily practice. We aim to assess the efficacy of Ophira™ comparing the Obtryx™ suburethral sling at a median 6 months follow-up.

**METHODOLOGY**

This prospective observational study was performed in the Urology Department of the City Hospital in Birmingham, England. A total of 61 women with SUI between January, 2009 and August, 2010 were self-selected for either Ophira™ (30) or Obtryx (31) procedure based upon their choice of anaesthetic. In all cases, informed consent was obtained and the procedure was performed in a day-case setting. The clinical effectiveness department of the unit granted approval for this project.

As part of the pre-operative workup, a detailed case history was compiled including the type, timing and severity of incontinence, associated voiding, and other urinary symptoms. The patients were asked to fill in the International Consultation on Incontinence modular Questionnaire Short Form (ICIQ-SF), which is a validated measure of overactive bladder syndrome and health-related quality of life (Abrams et al., 2006). A physical examination was performed that included a cough stress test (CST). Prior to the CST all women were assessed with a bladder scan to ensure a bladder volume of at least 250 ml. Where clinical assessment was inconclusive or suggestive of a mixed urinary incontinence, urodynamic evaluation was performed. Once urodynamic stress incontinence (USI) had been established and the conservative measures of lifestyle advice and pelvic floor exercises had failed to show satisfactory improvement, affected women were offered surgical intervention.

Objective cure was defined when physical examination of the patient yielded a negative cough stress test, while subjective cure was assessed based on woman's perception of improvement in stress urinary incontinence symptoms (significantly improved, same, worse) at the 12th month follow up visit.

The Ophira™ Mini-Sling System was performed under local anaesthesia, using 30 to 40 ml of 1% lignocaine injected at the mid-urethra towards the vaginal fornix, advancing 2 cm into the obturator internus muscles. A small vertical incision in the vagina and dissection was performed as for the Obtryx™ transobturator tape. The polypropylene mesh was then inserted into the obturator internus muscles using self-anchoring arms. The Ophira™ system then allowed adjustment of the sling to achieve the right tension. Finally, the vaginal incision was closed with no need for a catheter.

The Obtryx™ transobturator mid-urethral sling system was performed under a general anaesthesia. To fit the polypropylene sling, a small vertical incision was made into the vagina, 1 cm from the urethral meatus. Minimal dissection was performed laterally towards the ascending ramus of the ischiopubic bone, preserving the endopelvic fascia. Two small incisions were then made in the skin above the obturator space. The curved needle system was then used in all cases to place a synthetic mesh from one skin incision, towards the vagina, around the urethra and back out through the second skin incision. The mesh was then adjusted to keep it tension free, before closing the vaginal incision. The bladder was catheterised and removed immediately following completion of the procedure.

All cases received 1.2 g intravenous co-amoxiclav, or gentamicin 120 mg if penicillin allergic, peri-operatively to prevent infection. Women were discharged once comfortable and having passed urine with less than 100 ml residual in the bladder. The surgeon performing the procedure prospectively collected the data regarding any complications. Statistical analysis of the data was performed by using Student’s t-test, chi-square test, and Fisher’s exact test, for which statistical package for social sciences (SPSS) ver. 16.0 (SPSS Inc., Chicago, IL, USA) was used. Statistical significance was set at p < 0.05.

**RESULTS AND DISCUSSION**

A total of 61 patients were suitable for a day case surgical procedure. Table 1 shows the baseline characteristics of the patients in each group: age, parity, pre-op CST, urodynamic stress incontinence (USI), mixed urinary incontinence (with a predominant SUI) and pure SUI (defined as a positive CST and only symptoms of SUI). There were no significant intergroup differences found. Table 2 shows that of the 30 patients that received the single-incision midurethral tape (Ophira™), 28 (93.3%) reported significantly improved symptoms and 27
(90%) had a negative cough stress test. This is compared to the 31 patients that received the transfuturator tape (Obtryx™), where 29 (93.5%) reported significantly improved symptoms and 29 (93.5%) had a negative CST. Women reported significantly improved quality of life as measured by the ICIQ-SF questionnaire irrespective of the procedure they received. There was no significant difference in either the objective or subjective cure rates between the single-incision midurethral tape (Ophira™) and transobturator tape (Obtryx™) suburethral sling procedures.

Table 3 shows the results of follow-up at 12 months. The only difference from the results at 6 months follow-up is with the ICIQ-SF results. However, there remained no significant difference between the single-incision midurethral tape (Ophira™) and transobturator tape (Obtryx™) suburethral sling procedures. For the three patients with a positive CST that were treated with a single-incision midurethral tape (Ophira™), two had a transobturator tape procedure and one had TVT procedure, because of a previous pelvic fracture which meant the transobturator route would be difficult. Of the two patients with a positive CST who were treated with a transobturator tape (Obtryx™), one declined further treatment and one had a TVT procedure.

On comparison of the peri-procedural complications, the only significant difference was found on blood loss. Of the 31 patients that received the transobturator tape (Obtryx™), three had more than average blood loss compared to one patient of the 30 that received the single-incision mid-urethral tape (Ophira™) P = 0.04.

SUI is a common distressing condition that significantly impairs quality of life for affected women. Minimally invasive synthetic slings have become the preferred technique for the treatment of SUI. In this study, we have compared the single-incision midurethral tape (Ophira™) and transobturator tape (Obtryx™). After a follow-up period of 12 months, the Ophira™ and Obtryx™ procedures were comparable in terms of both objective and subjective cure rates. The major advantage of Ophira™ when compared to TVT or TOT is the possibility of performing this procedure under local anaesthesia on an ambulatory basis. There have been other comparison studies of various single incision mid-urethral tape procedures, but none have looked at the Ophira™ system. The cure rates in these studies ranged from 55.8 to 90% (Deole et al., 2011; Abdel-Fattah et al., 2012; Barber et al., 2012; Sivaslioglu et al., 2012). The higher cure rates in our study can be partly explained by the short follow-up period. A study on another single incision mid-urethral tape showed a decrease in cure rate from 90 to 83% from 3 to 5 years follow-up (Sivaslioglu et al., 2012).

One of the weaknesses in this study is that the patients were not randomised to a surgical procedure, but self-selected to either Ophira or Obtryx based on their anaesthetic choice. This could have potentially introduced a source of bias where lifestyle and health

Table 2. Follow-up at 6 months.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ophira™ (30)</th>
<th>Obtryx™ (31)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly improved</td>
<td>93.3% (28/30)</td>
<td>93.5% (29/31)</td>
<td>0.68*</td>
</tr>
<tr>
<td>Same</td>
<td>6.7% (2/30)</td>
<td>6.5% (2/31)</td>
<td>1.0*</td>
</tr>
<tr>
<td>Positive CST</td>
<td>10% (3/30)</td>
<td>6.5% (2/31)</td>
<td>0.67*</td>
</tr>
<tr>
<td>Negative CST</td>
<td>90% (27/30)</td>
<td>93.5% (29/31)</td>
<td>0.62*</td>
</tr>
<tr>
<td>ICIQ-SF Pre Procedure Score</td>
<td>16.5±5.2</td>
<td>17.1±1.69</td>
<td>0.79**</td>
</tr>
<tr>
<td>ICIQ-SF Post Procedure Score</td>
<td>3.8±2.2</td>
<td>4.2±2.3</td>
<td>0.62**</td>
</tr>
</tbody>
</table>

CST, cough stress test; ICIQ-SF, International Consultation on Incontinence Modular Questionnaire Short Form. *Fisher’s exact test, ** student t test.

Table 3. Follow-up at 12 months.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ophira™ (30)</th>
<th>Obtryx™ (31)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly improved</td>
<td>93.3% (28/30)</td>
<td>93.5% (29/31)</td>
<td>0.68*</td>
</tr>
<tr>
<td>Same</td>
<td>6.7% (2/30)</td>
<td>6.5% (2/31)</td>
<td>1.0*</td>
</tr>
<tr>
<td>Positive CST</td>
<td>10% (3/30)</td>
<td>6.5% (2/31)</td>
<td>0.67*</td>
</tr>
<tr>
<td>Negative CST</td>
<td>90% (27/30)</td>
<td>93.5% (29/31)</td>
<td>0.62*</td>
</tr>
<tr>
<td>ICIQ Pre Procedure Score</td>
<td>16.5±5.2</td>
<td>17.1±1.69</td>
<td>0.79**</td>
</tr>
<tr>
<td>ICIQ Post Procedure Score</td>
<td>4.2±1.8</td>
<td>4.1±2.1</td>
<td>0.56**</td>
</tr>
</tbody>
</table>

CST, cough stress test; ICIQ-SF, International Consultation on Incontinence Modular Questionnaire Short Form. *Fisher’s exact test, ** student t test.
matters influence anaesthetic choice. However, there was no significant difference in either average age or anaesthetic grade of the two groups of patients. Another weakness in this study is that the objective measure of improved SUI was the CST. Some women were found to have a negative CST before the procedure, although these women would have shown urinary loss at low bladder pressures when urodynamic testing was performed. Other objective measures that could be employed to look for improvement include: repeating urodynamic assessment after the procedure, comparison of pad weights before and after treatment.

It is thought that the less invasive technique of the single-incision midurethral tape (Ophira™) could lead to less post-operative pain and intra-operative complications. This study showed greater blood loss in the group with the TOT procedure. However, it would be difficult to pick up significant differences in complications with such low study numbers. This study provides useful data on a comparison of the 2 products using a small representative population, however is limited by being non-randomised and with a short follow up period. To demonstrate any significant comparable outcomes there is a call for larger randomised controlled studies with long-term follow-up to provide a more rigorous critical analysis of these products.

SPONSORSHIP

Promedon has kindly agreed to sponsor the article processing charge for the journal. We would like to thank Promedon for the sponsorship.

REFERENCES


A useful biomarker in talar osteochondral disease activity: Mean platelet volume (MPV)

Ibrahim Karaman*, Ahmet Guney, Emre Yurdakul, Mithat Oner and Ibrahim Halil Kafadar

Department of Orthopaedics and Traumatology, Erciyes University Medical Faculty, Kayseri, Turkey.

Accepted 22th July, 2013

In order to test the role of platelet activation in the talar osteochondral disease, the mean platelet volume (MPV) in patients undergoing treatment of talar osteochondral disease was evaluated. White blood cell count and highly sensitive C-reactive protein were evaluated in 50 patients with osteochondral defect of talus. Disease activity was assessed according to American Orthopedic Foot and Ankle Society scoring. Additionally, visual analog scale for the pain assessment was used for the study. Biochemical parameters, rehabilitation parameters, and MPV levels were compared with each other at the admission and 3 weeks after surgery. MPV was significantly lower in patients with osteochondral lesions of talus after treatment as compared to admission levels. MPV and C-reactive protein levels decreased together. American orthopedic foot ankle score of the patients were increased after surgery. Visual analog scale decreased suggestive levels. It was proposed that MPV provides a useful marker in activity of inflammatory osteochondral disease. The aim of this study is to define the effect of platelet activation in talar osteochondral disease.

Key words: Talus, osteochondral lesion, platelet volume (MPV), biomarker.

INTRODUCTION

Osteochondral lesions of the talus are common, especially in athletes. It ranges from those confined to the hyaline cartilage covering the articular surface to those involving the subchondral bone (Berndt and Harty, 1959; Canale and Belding, 1980). The lesion may not be apparent on the surface of the cartilage or it may be confined to the subchondral bone without cartilage involvement. It has been shown that the frequency of osteochondral lesions increase following repetitive ankle sprains (Mintz et al., 2003; Brown et al., 2004). Although the etiology is not well understood, both traumatic and atraumatic causes are thought to be effective of pathophysiology. Several studies have shown an anamnestic coincidence of distortion and/or supination trauma prior to the onset of osteochondral disease at the talus. Biomechanical experiments demonstrated that these areas are those with the highest load under varus/valgus and pronation/supination stress. Trauma is held responsible for the more frequent medial, cup-shaped lesion and the less frequent lateral, wafer-shaped lesion (Brown et al., 2004; Lee et al., 2011; Theodoropoulos et al., 2012). Other possible etiological factors such as genetic, metabolic or infectious causes are discussed but are not yet substantiated by scientific and experimental evidence. It has been shown in many different studies, that pluripotent stem cell response activates the thrombocytes which have a key role in tissue recover and inflammatory response (Sun et al., 2010; Kon et al., 2010). The high sensitive C-reactive protein (hs-CRP) is currently the best applicant assay to identify and monitor the inflammatory response. hs-CRP also increases with infectious and non-infectious inflammatory response. The present study aims to investigate the correlation of mean platelet volume (MPV), hs-CRP and clinical activity indexes, namely American Orthopedic Foot and Ankle Society Scale.

*Corresponding author. E-mail: drikaraman@gmail.com. Tel: +90 352 2076666. Fax: +90 352 4375288.
Table 1. The demographic and biochemical properties

<table>
<thead>
<tr>
<th>Parameter</th>
<th>n= 50 (Mean±SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>36.7 (18±67)</td>
</tr>
<tr>
<td>Gender, female (%)</td>
<td>22 (44)</td>
</tr>
<tr>
<td>White blood cell count (10^3/mm)</td>
<td>7.50 ± 2.13</td>
</tr>
<tr>
<td>Hemoglobin (g/dL)</td>
<td>13.0 ± 2.0</td>
</tr>
<tr>
<td>Platelet count (x1,000/mm^3)</td>
<td>266.06 ± 91.42</td>
</tr>
<tr>
<td>Neutrophil (×10^9/L)</td>
<td>4.48 ± 1.89</td>
</tr>
</tbody>
</table>

Table 2. Comparison of clinical parameters at the admission and after 3 weeks control.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>The first admission (Mean±SD)</th>
<th>3 weeks control (Mean±SD)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPV (fl)</td>
<td>9.47±1.06</td>
<td>9.07±0.99</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hs-CRP (mg/dl)</td>
<td>2.98±1.62</td>
<td>2.54±1.25</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>WBC (×10^9/L)</td>
<td>7.50±2.13</td>
<td>10.10±5.85</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>4.48±1.89</td>
<td>6.41±2.53</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PLT (×10^9/L)</td>
<td>266.0±91.4</td>
<td>270.1±86.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VAS</td>
<td>7.79±0.76</td>
<td>3.00±1.36</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>AFAS</td>
<td>46.0±9.84</td>
<td>81.4±11.77</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

(AOFAS) and Visual Analog Scale (VAS) in fifty patients were operated, because of the talar osteocondral disease.

METHODOLOGY

Study population

The study was performed with 50 patients diagnosed with talar osteochondral lesion. The patients were chosen among the patients admitted to the Orthopedics Surgery Clinics of Erciyes University Hospital between 2008 and 2011. This study complied with the Declaration of Helsinki, and was approved by the Ethics Committee and the Institutional Review Board of Erciyes University Medical School and informed consent was obtained from each patient.

Clinical assessment

Demographic data, AOFAS and VAS scores of the subjects were obtained from hospital records.

Laboratory values

The following data were recorded from the computerized hospital database: hs-CRP, hemoglobin levels, white blood cell count, platelet count and MPV. For the subjects, hs-CRP and complete blood count (CBC) parameters were recorded at admission and after surgery. Tripotassium EDTA based anticoagulated blood samples were collected in the morning after 20 min rest and were stored at 4°C. These samples were assessed by Sysmex K-1000 auto analyzer© with 30 min of sampling. High sensitive CRP was measured by using BN2 model nephleometer© (Dade–Behring). The expected levels of hs-CRP ranged from 0 to 3 mg/L in our laboratory.

Statistical analysis

Statistical analysis was performed using statistical Package for Social Sciences (SPSS) 15.0 statistical software. The adequacy of all parameters to normal distribution was tested by using a Kolmogorov–Smirnov test. Parametric tests were applied with normal distribution, while non-parametric tests were used for those which did not have normal distribution. Normally distributed variables were given as mean±standard deviation (SD). Student’s t-test was used for a statistical comparison of normally distributed data and a Mann–Whitney U test was used for the data that were not normally distributed between these two groups. Spearman or Pearson correlation coefficients examined the degree of association between examined variables and the statistical significance was defined as p<0.05.

RESULTS

This study was performed with 50 patients operated on osteochondral disease of the talus. The mean age of patients was 36.7 (18 to 67) years. Demographic data and laboratory findings of patients are shown in Table 1. As expected, acute phase reactant (APR) levels were significantly high in term of preoperative examination of patients. When compared with the MPV values, the average of patients before arthroscopic debridement (9.47±1.06), the increase in MPV seen after arthroscopic debridement (9.07±0.99) was found to be statistically significant (p<0.01). Levels of hs-CRP preoperative (2.98±1.62) and postoperative (2.54±1.25) decreased significantly after treatment and it is shown in Table 2 and Figures 1 and 2. AFAS scores of patients increased.
significantly, VAS scores decreased significantly after 3 weeks and it is shown in Figures 3 and 4.

DISCUSSION

This study revealed that MPV decreased in active talar osteochondral disease patients as compared to preoperative and postoperative levels. Furthermore, MPV increased after treatment of patients. Platelets are enucleated cells measuring 1 to 2 Wm in length with an average life span of 7 to 8 days; they are derived from the cytoplasmic fragmentation bone-marrow megakaryocytes and play a crucial role in the process of inflammation, thrombosis and atherosclerosis (Wagner and Burger, 2003; Davi and Patrono, 2007). Platelets are a source of inflammatory mediators and it has been reported that the activation of platelets by inflammatory triggers may be a critical component of inflammatory response (Wagner and Burger, 2003). In some studies in which MPV was tested as a simple inflammatory marker, MPV was reported to have been affected by inflammation, and that it increases significantly in myocardial infarction, sepsis, cerebrovascular diseases, respiratory distress syndrome and chronic pulmonary diseases and bone diseases (Mercan et al., 2010; Xue-
Figure 3. Preoperative and postoperative AFAS score.

Figure 4. Preoperative and postoperative VAS score.

In conclusion, our results suggest that MPV values predict the prognosis of patients with talar OCD and reflect increased inflammatory response and platelet activation. Therefore, it may be used as an additional parameter for the preliminary approach of monitoring patients in clinical practice.

REFERENCES


8th European Congress on Tropical Medicine and International Health, Copenhagen, Denmark, 10 Sep 2013

13th Congress of the Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APCCB 2013), Bali, Indonesia, 27 Oct 2013
Conferences and Advert

November 2013
7th International Conference on Communication in Veterinary Medicine (ICCVM), St. Louis, USA, 4 Nov 2013

October 2013
13th Asia Pacific Federation for Clinical Biochemistry and Laboratory Medicine Congress, Bali, Indonesia, 6 Oct 2013

13th Congress of the Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APCCB 2013), Bali, Indonesia, 27 Oct 2013
Journal of Clinical Medicine and Research

Related Journals Published by Academic Journals

- Journal of Metabolomics and Systems Biology
- Journal of Neuroscience and Behavioral Health
- Journal of Physiology and Pathophysiology
- Journal of Public Health and Epidemiology
- Medical Case Studies
- Medical Practice and Reviews
- Journal of General and Molecular Virology
- Research in Pharmaceutical Biotechnology