GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 3 (348) Март 2024

ТБИЛИСИ - NEW YORK

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
No 3 (348) 2024

Содержание:

Alla Kyrychenko, Nataliya Tomakh, Vasyl Kornatsky, Olena Lysunets, Oksana Sirenko, Olexandr Kuryata.
ACUTE MYOCARDITIS IN YOUNG AGE MIMICKING AS ST-ELEVATION MYOCARDIAL INFARCTION: CASE REPORT…..……6-9

Nikolaos Geropoulos, Polychronis Voultsos, Miltiadis Geropoulos, Fani Tsolaki, Georgios Tagarakis.
CENTRALIZATION AND CORRUPTION IN HEALTH PROCUREMENT OF THE SOUTHERN EUROPEAN UNION COUNTRIES.....10-21

Yerlan Bazargaliyev, Bibigul Tleumagamabetova, Khatimya Kudabayeva, Raikul Kosmuratova.
ANALYSIS OF ANTIDIABETIC THERAPY FOR TYPE 2 DIABETES IN PRIMARY HEALTH CARE (WESTERN KAZAKHSTAN)…….....…….22-27

Christina Mary P Paul, Shashikala Manjunatha, Archana Lakshmi PA, Girisha Sharma.
A STUDY ON THE INFORMATION TRANSFER AND LONG-TERM PSYCHOLOGICAL IMPACT OF CHILD SEXUAL ABUSE.…28-31

Nino Chomakhashvili, Nino Chikhladze, Nato Pitskhelauri.
ERGONOMIC PRACTICE IN DENTAL CLINICS AND MUSCULOSKELETAL DISORDERS AMONG DENTISTS IN GEORGIA…..32-35

Chnar S. Maarof, Ali S. Dauod, Rachel E. Dunham.
PREVALENCE OF PRETERM DELIVERY AMONG WOMEN WHO RECEIVE PROGESTERONE SUPPLEMENTATION DURING PREGNANCY: CROSS-SECTIONAL OBSERVATIONAL STUDY…….....…36-39

S.K. Tukeshov, T.A. Baysekeev, E. D. Choi, G.A. Kulushova, M.I. Nazir, N.B. Jaxymbayev, A.A. Turkmenov.
OSTEOSYNTHESIS OF COMPLEX COMMINUTED HAND BONE FRACTURES BY APPLYING THE LACING METHOD (A CLINICAL CASE STUDY) …….....……40-43

Majed A Mohammad, Firas A Jassim, Ali Malik Tiryag.
RETROGRADE INTRARENAL LITHOTRIPSY USING DISPOSABLE FLEXIBLE URETEROSCOPE…….....….44-46

Olga Samara, Mykhailo Zhylin, Viktoriia Mendelo, Artur Akopian, Nina Bakuridze.
THE ROLE OF EMOTIONAL INTELLIGENCE IN THE DIAGNOSIS AND PSYCHOTHERAPY OF MENTAL DISORDERS: AN ANALYSIS OF PRACTICAL APPROACHES…….....……47-53

Arnab Sain, Ralph Keita, Arunava Ray, Nauman Manzoor, Arsany Metry, Ahmed Elkilany, Kanishka Wattage, Michele Halasa, Jack Song Chia, Fahad Hussain, Odiamehi Aisabokhale, Zain Sohail, Vivek Deshmukh, Adhish Avasthi.
SAFE USE OF INTRA-OPERATIVE TOURNIQUETS IN A DISTRICT HOSPITAL IN THE UK-AN AUDIT STUDY IN ORTHOPAEDIC THEATRES AND REVIEW OF CURRENT LITERATURE…….....……54-56

Takuma Hayashi, Ikuo Konishi.
POST−COVID-19 INFLAMMATORY RHEUMATOID ARTHRITIS REMISSION…….....……57-59

Athraa Essa Ahmed.
KNOWLEDGE OF SECONDARY SCHOOL STUDENTS REGARDING PREVENTIVE MEASURES FOR RESPIRATORY INFECTIOUS DISEASE IN TIKRIT CITY…….....……60-62

Irakli Gogokhia, Merab Kiladze, Tamar Gogichaishvili, Koba Sakhechidze.
FEASIBILITY AND EFFECTIVENESS OF GENERAL ANESTHESIA WITH OPIOIDS VERSUS OPIOID-FREE ANESTHESIA PLUS TRANSVERSUS ABDOMINIS PLANE BLOCK ON POSTOPERATIVE OUTCOMES AFTER MINI GASTRIC BYPASS SURGERY…….....……..63-71

Anton I. Korbut, Vyacheslav V. Romanov, Vadim V. Klimontov.
URINARY EXCRETION OF ALPHA-ACTININ-4 AND TIGHT JUNCTION PROTEIN 1 IN PATIENTS WITH TYPE 2 DIABETES AND DIFFERENT PATTERNS OF CHRONIC KIDNEY DISEASE…….....……...72-77

Rishu Bansal, Maia Zhamutashvili, Tinatin Gognadze, Natia Jojua, Ekaterine Dolmazishvili.
ENTEROHEMORRHAGIC ESCHERICHIA COLI LEADING TO HAEMOLYTIC UREMIC SYNDROME - CASE STUDY AND REVIEW…….....……78-80

Ayah J. Mohammed, Entedhar R. Sarhat.
PARTIAL PURIFICATION OF GLUTATHIONE PEROXIDASE ENZYME FROM WOMEN WITH BREAST CANCER.....…….81-86

Mariam Kekenadze, Nana kvirkvelia, Maia Beridze, Shorena Vashadze.
SEROTONIN AND AMYOTROPHIC LATERAL SCLEROSIS (ALS)…….....……..87-90

Arnab Sain, Zain Sohail, Nauman Manzoor, Amir Varasteh, Vivek Deshmukh, Arsany Metry, Fahad Hussain , Ahmed Elkilany, Kanishka Wattage, Michelle Halasa, Jack Chai Song, Ralph Keita, Odiamehi Aisabokhale, Koushik Ghosh.
IMPORTANCE OF JOINT LINE RESTORATION IN TOTAL KNEE ARTHROPLASTY…….....……91-93

Lurin I, Gorobeiko M, Lovin A, Gorobeyko B, Lovina N, Dinets A.
APPLICATION OF ARTIFICIAL INTELLIGENCE IN CIVIL AND MILITARY MEDICINE…….....…….94-98

Kassim SA Al Neaimy, Okba N Alsarraf, Maes MK Alkhyatt.
COMPARATIVE STUDY OF OXIDATIVE STRESS IN PATIENTS WITH B -THALASSEMIA MAJOR ON DEFERASIROX VERSUS DEFEROXAMINETHERAPY…….....……..99-102

Hinpetch Daungsupawong, Viroj Wiwanitkit.
COMMENT ON “A CROSS-SECTIONAL STUDY ON COVID-19 VACCINATION HESITATION AMONG UNIVERSITY STUDENTS.” ……103-104

Taisa P. Skrypnikova, Petro M. Skrypnykov, Olga V. Gancho, Galina A. Loban’, Julia V. Tymoshenko, Vira I. Fedorchenko, Olena A. Pysarenko, Kseniia A. Lazareva, Tetyana A. Khmil, Olga O. Kulai.
IMPROVEMENT OF THE METHODOLOGY OF BIOMATERIAL COLLECTION FOR THE DIAGNOSIS OF THE ORAL CAVITY MUCOSADISEASES……..105-108

Mkrtchyan S, Shukuryan A, Dunamalyan R, Sakanyan G, Galstyan H, Chichoyan N, Mardiyan M.
CLINICAL SIGNIFICANCE OF CHANGES IN QUALITY OF LIFE INDICATORS AS A METHOD FOR ASSESSING THE EFFECTIVENESS OF ENT HERBAL REMEDIES……..109-116

OSAMA ARIM, Ali Alshalcy, Mohammed Z. Shakir, Omar KO. Agha, Hayder Alhamdany.
TRANSPEDICULAR SCREW FIXATION IN DEGENERATIVE LUMBOSACRAL SPINE DISEASE SURGICAL OUTCOME…..117-121

Tavartkiladze G, Kalandadze M, Puturidze S, Parulava Sh, Margvelashvili V.
TEMPOROMANDIBULAR JOINT DISORDERS AND THE WAY OF THEIR OPTIMIZATION: A LITERATURE REVIEW…….....22-127

Mohammed Saarti, Mohammed D Mahmood, Loay A. Alchalaby.
OVERVIEW OF DRUG-INDUCED OROFACIAL CLEFT……128-131

Tchernev G, Broshtilova V.
(NDMA) METFORMIN AND (NTTP) SITAGLIPTIN INDUCED CUTANEOUS MELANOMAS: LINKS TO NITROSOGENESIS, NITROSO-PHOTOCARCINOGENESIS, ONCOPHARMACOGENESIS AND THE METABOLIC REPROGRAMMING……132-143

Zhanylsyn U. Urasheva, Alima A. Khamidulla, Zhanylsyn N. Gaisiyeva, Gulnar B. Kabdrakhmanova, Aigul P. Yermagambetova, Aigerim B. Utegenova, Anastassiya G. Ishutina, Moldir M. Zhanuzakova, Moldir K. Omash.
ANALYSIS OF RISK FACTORS FOR ISCHEMIC STROKE IN RURAL RESIDENTS OF THE AKTOBE REGION……..…….144-150

Bikbaeva Karina R, Kovalenko Elizaveta V, Vedeleva Ksenia V, Pichkurova Galina S, Maranyan Marina A, Baybuz Bogdan V, Baymurzaev Ibragim A, Cenenko Evgeniy A, Kurmagomadov Adam A, Ataev Ahmed B, Malsagov Shahbulat Kh.-B.
EVALUATION OF THE EFFECT OF REBAMIPIDE ON THE PROGRESSION OF ULCERATIVE COLITIS IN RATS IN THE EXPERIMENT…….151-153

Oleg Batiuk, Iryna Hora, Valeriy Kolesnyk, Inna Popovich, Oleksandr Sofilkanych.
MEDICAL AND LEGAL ISSUES OF OBSERVING THE RIGHTS OF A PERSON WITH A MENTAL ILLNESS WHO HAS BECOME A PARTICIPANT IN CRIMINAL PROCEEDINGS…….154-160

GEORGIAN MEDICAL NEWS
No 3 (348) 2024

RETROGRADE INTRARENAL LITHOTRIPSY USING DISPOSABLE FLEXIBLE URETEROSCOPE

Majed A Mohammad[1], Firas A Jassim[2], Ali Malik Tiryag[3].

[1]*Assistant professor, Dean of College of Nursing, University of Basrah, Basrah, Iraq.*
[2]*Community Health Nursing Department, College of Nursing, University of Basrah, Basrah, Iraq.*
[3]*Fundamentals of Nursing Department, College of Nursing, University of Basrah, Basrah, Iraq.*

Abstract.

This research aims to characterize efficiency of a flexible ureteroscope that is of single use with regard to surgical time, absence of stone, and complications. From March 2022 to April 2023, the Basrah Urological Centre carried out this anticipated work. After excluding patients with untreated urinary tract infections, excessive blood urea, and ureteral strictures, the study involved ninety-eight patients. All patients were above 20 years of age. Patients were operated on by the same surgeon. This study involved 108 patients in this study composed of 42 (39.8%) men and 65 (60.2%) women. With a standard deviation of 10.9 years, the patient's mean age was 39.2 years. The total stone burden ranged from 6.9 to 14.5 mm, averaging 9.7 ± 2.9 mm. The stone density ranged from 820-1411 HU, averaging 1000.8 ± 279.3 HU. According to the current study, treating renal stones with a single-use flexible ureteroscope is less complicated and more successful.

Key words. Kidney stone, flexible ureteroscope, intrarenal intervention.

Introduction.

Globally, renal stones are becoming an increasingly prevalent issue. They mainly affect people in the 20–40 age range. The goal of treating renal stones is to minimize morbidity while achieving the highest rate of stone-free status. It is desired for therapies to be as minimally intrusive as feasible. Renal stones of less than 2 cm could be approached using extracorporeal shockwave lithotripsy, retrograde intrarenal surgery, or percutaneous nephrolithotomy (PNL) [1].

Nevertheless, in this instance, a flexible ureteroscope was the best choice. Devices with one or several uses are available. (PolyscopeTM) was first introduced single use ureteroscope by Lumens in the year 2011, and it used reusable fiberoptic bundles that could be joined to flexible catheters that can be safely disposed. This was a significant advancement in the ureteroscope manufacturing industry [2]. The devices have evolved over the more than 25 years, with LithoVuetm™ being the approach that first accessed the upper ureter. The device's efficacy and safety were investigated and verified. Uscope UE3022 was just introduced as a new single-use digital device invented by PusenTM (Zhuhai et al., China). The Pusen™ gadget was created to get over the drawbacks of traditional ureteroscopes that were reusable. The aim of this research is to characterize the efficiency of a flexible ureteroscope that are of single use in relation to time of surgery, success rate to free stones, and possible drawbacks [3].

Materials and Methods.

From March 2022 to April 2023, the Basrah Urological Centre carried out this study and work [4]. After excluding patients with untreated urinary tract infections, excessive blood urea, and ureteral strictures, the study involved one hundred eight patients. Every patient was chosen if they were over 20. The surgeon performed operations on patients. A unique data collection tool was created to gather data on demographics and surgical assessments, including stone position and size, intervention time, fluoroscopy length, and residual stone. Problems with ureteroscopy were also mentioned. All patients underwent urine examinations, CBCs, spiral abdominal CT scans, and urine cultures. PusenTM fr. 7.5 we utilized a flexible ureteroscope with 10 fr: StorzTM Calculus III laser machine and ureteric access sheath. Informed consent was given to each patient and signed by them [5]. Every patient received general anesthesia. After that, a guidewire was used to implant the semirigid ureteroscope. After a week, the surgery was repeated if the lower ureter was not dilated effectively with the insertion of a JJ catheter—the eleven fr. Ureteral access sheaths were used while under fluoroscopic supervision. After surgery, every patient received a JJ stent. Research data were loaded into an SPSS spreadsheet for extracting relevant tables and analyzing them. Categorically sorted variables were displayed as percentages and frequencies, continuous variables were displayed as qualitative parameters. Student's t-test was employed to look at mean differences. Using chi-squared tests, associations between categorical variables were examined. A significance level of 0.05 was chosen [6,7].

Results.

Table 2 categorizes the 108 cases based on their location within the kidney and their size. The renal pelvis is the most common location, accounting for 41 cases (38.0%), followed by the upper ureter or pelvi-ureteric junction with 21 cases (19.4%). Cases are relatively differently distributed between those less than 10mm (46 cases, 42.5%) and those 10mm or larger (61 cases, 57.5%). Cases showed significant differences in their location from upper ureter up to the calyces (P values <0.05). This suggests that the proportion of cases in the upper ureter that are less than 10mm is statistically different from the proportion in other locations.

Surgery took an average of 68 minutes, with a wide range of 25 minutes. Fluoroscopy, an imaging technique used during surgery, lasted about 31 seconds on average, with a variability of 11.5 seconds. The success rate was very high, with 96.8%

Table 1. *Age and sex of patients.*

Age (years)	**Mean ± SD**	39.2 ± 10.9
	Range	24-66
Sex	**Male**	42 (39.8%)
	Female	65 (60.2%)

Among the one hundred and eight patients chosen for this study, a gender distribution of 39.8% male and 60.2% female was observed. Age ranged from 24-66 years with a mean of 39.2 and SD of 10.9.

Table 2. *Stone location according to size.*

Location	**<10 mm**	**>= 10 mm**	**Total**	**P value***
Pelvi-ureteric junction	9 (19.6%)	11 (18.0%)	21 (19.4%)	0.001
Renal pelvis	19 (41.3%)	22 (36.1%)	41 (38.0%)	
Upper calyx	5 (10.9%)	8 (13.1%)	13 (12.0%)	
Middle calyx	6 (13.0%)	5 (8.2%)	11 (10.2%)	
Lower calyx	7 (15.2%)	15 (24.6%)	22 (20.4%)	
Total	46 (100%)	61 (100%)	108 (100%)	

Chi-squared test

Table 3. *Density of stones and CT stone burden.*

Total stone burden (mm in CT scan)	Mean ± SD	9.7 ±2.9
	Range	6.9-14.5
Stone density (HU)	Mean ± SD	1000.8 ±279.3
	Range	820-1411

Stone burden ranged from 6.9-14.5 mm with a mean of 99.7 ±2.9 mm. Stone density on the other hand had a mean of 1000.8 ±279.3 HU with a range of 820-1411 HU (Table 3).

Table 4. *Time of surgery, time of fluoroscopy.*

Surgical time (minutes)	68.0 ±25.0
Fluoroscopy time (seconds)	31.5 ± 11.3

Table 5. *Complications and stone free rate.*

Complications	8 (8.2)
Stone free rate	96.8%

of patients achieving stone clearance. Complications occurred in 8 patients (8.2%). Overall, the surgery seems to have been effective with an apparently good success rate and modest complication rate. The long and variable surgical time suggests some procedural complexity [8,9].

The following is a list of various complications' characteristics and severity: sepsis occurred in three cases. Bleeding to the degree that it obscured the view happened in three other cases. An event of partial urethral injury was reported once. Fornix rupture that developed due to high intrarenal pressure added one complication.

Discussion.

Flexible ureteroscopy has been used extensively to manage stones located in the upper urinary tract because of its advantages, which include less blood loss, shorter hospital stays, and reduced invasiveness. This study had 108 patients; forty-two (39.8%) were men, sixty-five (60.2%) were women. A mean of 39.2 and a standard deviation of 10.9 years, the patient's age ranged from 24-66 years. The study's findings corroborated another study's finding that 70.4% of the study sample consisted of women [10].

The distribution of renal stones according to size and location is shown in Table (2). Of the twenty-one stones found in the upper ureter, nine (19.6%) were less than 10 mm, while eleven (18.0%) were greater than or equal to 10 mm. Twenty-two (36.1%) of the forty-one stones in the renal pelvis are equivalent to or greater than 10 mm, while nineteen (41.3%) were less than 10 mm. Thirteen stones total, five (10.9%) less than 10 mm and eight (13.1%) equal to or greater than 10 mm, make up the upper calyx stones. Of the eleven stones located in the middle calyx, six (13.0%) were equal to or larger than 10 mm, while five (8.2%) are less than 10 mm. fifteen (24.6%) of the twenty-two stones in the lower calyx were equal to or larger than 10 mm, whereas seven (15.2%) were smaller than 10 mm. The distribution of renal stone locations regarding size showed notable differences. The present study's findings align with another study that indicated that the renal pelvis contains 73.2% of all stones.

According to Table (3), the overall stone burden ranged from 6.9 to 14.5 mm, with an average of 9.7± 2.9 mm. The stone density ranged from 820 to 1411 HU, with an average of 1000.8 ± 279.3 HU. The findings of the current investigation included a study that reported a stone burden of 10 mm and a percentage of 51.5% [11].

Based on Table 4, the average surgery duration was 68 minutes, with a 25 minute standard deviation. With a standard deviation of 11.3 seconds, the average fluoroscopy time is 31.5 seconds. The percentage of people without stones is 96.8%. Eight (8.2%) patients had a problem from the total number of procedures. The type and severity of these problems include:

Sepsis which occurred in three cases. Bleeding to the degree that it obscured the view which happened in three other cases. An event of partial urethral injury that was reported once. Fornix rupture that developed due to high intrarenal pressure was another complication.

The current study's findings corroborated those of study, which shows that the reported stone-free percentage is 95.2%. A 52-minute surgery was the average duration. Among the complications include urosepsis 0% (0/684), moderate fever 0.7% (5/684), urinary perforation 0.87% (6/684), and persistent haematuria 0% (0/684) [12].

Conclusion.

Flexible URS appears effective for treating upper urinary tract stones with an apparently good stone-free rate (96.8%) and low complication rate (8.2%). Findings are consistent with other studies reporting similar success rates and complication profiles.

The most common location for stones was the kidney pelvis (38.0%), followed by the upper ureter or pelvi-uretric junction (19.4%).

Stone size distribution varies across locations, with the renal pelvis containing a higher proportion of larger stones (≥10mm) compared to other locations.

The average stone burden was 9.7 mm, and the average density was 1000.8 HU.

The average surgery duration was 68 minutes, and the mean fluoroscopy time was 31.5 seconds. These values are close to corresponding parameters reported in other studies.

The study findings are largely consistent with existing literature

on flexible URS for upper urinary tract stones. This strengthens the generalizability of the results and adds to the existing body of evidence supporting the use of this technique.

Limitations and Future Directions.

The study's relatively small sample size can impair the generalizability of the results. However further research with larger cohorts could be necessary to validate the conclusions and explore patient-specific factors influencing outcomes.

Overall, the study suggests that flexible URS is a safe and effective minimally invasive technique for treating upper urinary tract stones. The findings align with existing literature and provide valuable insights into stone distribution, procedural parameters, and outcomes.

Acknowledgments.

Authors' contributions: The authors collected the data, reviewed the data, studied the biostatistical analysis, and wrote the manuscript. The authors also declare that they have approved the manuscript and agree with its content.

Funding: No funding to declare.

Data and materials: The respective authors will provide the datasets used in this study upon request.

Declarations: The Ethical Committee of the College of Nursing Clinic allowed the study to continue. The authors declare no competing interests.

REFERENCES

1. Bryniarski P, Paradysz A, Zyczkowski M, et al. A randomized controlled study to analyze the safety and efficacy of percutaneous nephrolithotripsy and retrograde intrarenal surgery in the management of renal stones more than 2 cm in diameter. Journal of endourology. 2012;26:52-7.
2. Wang F, Yang Y, Chen H, et al. The application of a single-use fiberoptic flexible ureteroscope for the management of upper urinary calculi. International Urology and Nephrology. 2018;50:1235-41.
3. Cosmin E. Initial experience with the new super thin single-use Pusen flexible ureteroscope 7.5 Fr in renal stones endoscopic treatment. Chirurgia. 2021;116:354-60.
4. Mazzucchi E, Marchini GS, Berto FC, et al. Single-use flexible ureteroscopes: update and perspective in developing countries. A narrative review. International braz j urol. 2022;48:456-67.
5. Butticè S, Sener TE, Netsch C, et al. LithoVue™: A new single-use digital flexible ureteroscope. Central European Journal of Urology. 2016;69:302.
6. Giusti G, Proietti S, Luciani LG, et al. Is retrograde intrarenal surgery for the treatment of renal stones with diameters exceeding 2 cm still a hazard? The Canadian Journal of Urology. 2014;21:7207-12.
7. Parikh K, Jain R, Soni R, et al. How to Perform Flexible Ureteroscopy for Renal Stones. In Flexible Ureteroscopy. 2022:89-98.
8. Salvadó JA, Olivares R, Cabello JM, et al. Retrograde intrarenal surgery using the single–use flexible ureteroscope Uscope 3022 (Pusen™): evaluation of clinical results. Central European Journal of Urology. 2018;71:202.
9. Türk C, Petřík A, Sarica K, et al. EAU guidelines on interventional treatment for urolithiasis. European urology. 2016;69:475-82.
10. Somani BK, Giusti G, Sun Y, et al. Complications associated with ureterorenoscopy (URS) related to treatment of urolithiasis: the Clinical Research Office of Endourological Society URS Global study. World Journal of Urology. 2017;35:675-81.
11. Traxer O, Wendt-Nordahl G, Sodha H, et al. Differences in renal stone treatment and outcomes for patients treated either with or without the support of a ureteral access sheath: The Clinical Research Office of the Endourological Society Ureteroscopy Global Study. World Journal of Urology. 2015;33:2137-44.
12. Salvadó JA, Olivares R, Cabello JM, et al. Retrograde intrarenal surgery using the single–use flexible ureteroscope Uscope 3022 (Pusen™): evaluation of clinical results. Central European Journal of Urology. 2018;71:202.