

Intraurethral lidocaine use during urodynamics in female patients: A systematic review and meta-analysis

Dian Paramita Oktaviani¹ , Mohammad Ayodhia Soebadi² , Yudhistira Pradnyan Kloping¹ ,
Furqan Hidayatullah¹ , Zakaria Aulia Rahman¹ , Soetojo Soetojo¹ 

Cite this article as: Paramita Oktaviani D, Ayodhia Soebadi M, Pradnyan Kloping Y, Hidayatullah F, Aulia Rahman Z, Soetojo S. Intraurethral lidocaine use during urodynamics in female patients: A systematic review and meta-analysis. *Turk J Urol.* 2021; 47(5): 366-374.

ABSTRACT

Pain and discomfort may occur in catheterization during a urodynamic examination. A lidocaine gel combined with a water-based lubricant is sometimes used to reduce pain during catheterization. Several studies claimed that intraurethral lidocaine administration could cause inaccurate urodynamic parameters results. However, its definite effects in urodynamics testing on humans are still not clear. We aimed to evaluate the effects of intraurethral lidocaine on pain and urodynamic study parameters in patients undergoing an invasive urodynamic examination. A systematic search adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol was performed in the MEDLINE, PubMed, and ScienceDirect databases for randomized controlled trials (RCTs). The bias of the studies is evaluated using the Cochrane risk of bias tool by two independent reviewers. The analyses of continuous outcomes were displayed as mean difference (MD), whereas odds ratio is used to analyze dichotomous data. Heterogeneity between studies is determined using the I^2 value. A total of three RCTs out of 622 discovered that articles were eligible for analysis. Forest plot analysis of the mean visual analogue scale difference of the studies indicated an insignificant difference between the lidocaine and placebo group (MD -7.68; 95% CI -34.04 to -18.68, $P = .57$). All urodynamic parameter results were also similar between the two groups ($P > .05$). Routine intraurethral lidocaine injection prior to a urodynamic study does not affect pain intensity and urodynamic parameters.

Keywords: Intraurethral lidocaine; lidocaine; urodynamics; urodynamic study.

Introduction

Urodynamics or urodynamic study is a term that covers a variety of tests to measure physiological parameters of the lower urinary tract by assessing its function.¹ The testing includes both invasive and noninvasive evaluations. Invasive examinations include catheter insertion into the bladder.² Catheterization during an urodynamic study could induce pain and discomfort in patients. In performing the examination, external factors that could affect the results should be minimized to gain accurate results representative of the patient's condition. Several studies reported a relatively higher intensity of pain and discomfort during catheterization in urodynamics examination among female patients with a history of

chronic pain.^{3,4} A lidocaine gel combined with a water-based lubricant is sometimes used to ease catheter insertion and reduce pain.⁵ However, several studies claimed that intraurethral lidocaine administration could disrupt the sensory nerve response, which could interfere with bladder emptying. During urinary passage through the urethra, the afferent nerves of pudendal nerve would be activated and cause bladder contraction to ensure normal efficient micturition.⁶ The disruption of the mechanism could lead to ineffective voiding and urinary retention, thus resulting in inaccurate urodynamic parameters results.⁷ There is a dilemma whether intraurethral lidocaine could be necessarily given for patients undergoing a catheterization during an urodynamic study. Therefore, we aimed to evaluate

¹Department of Urology, Universitas Airlangga Faculty of Medicine, Dr. Soetomo General-Academic Hospital, Surabaya, Indonesia

²Department of Urology, Universitas Airlangga Faculty of Medicine, Universitas Airlangga Teaching Hospital, Surabaya, Indonesia

Submitted:
27.05.2021

Accepted:
11.08.2021

Corresponding Author:
Soetojo Soetojo
E-mail:
s.tojowirjoprano@yahoo.com

© Copyright 2021 by Turkish Association of Urology

Available online at
www.turkishjournalofurology.com



Dian Paramita Oktaviani Soetojo <dianvian.dianvian@gmail.com>

Fwd: Turkish Journal of Urology - Manuscript ID TJU-2021-0182

1 message

Soetojo Soetojo <s.tojowirjopranoto@yahoo.com>
Cc: dianvian.dianvian@gmail.com

Wed, Jun 2, 2021 at 7:47 AM

Dikirim dari iPad saya

Awal pesan yang diteruskan:

Dari: Irmak Berberoğlu <onbehalf@manuscriptcentral.com>
Tanggal: 27 Mei 2021 14.07.44 WIB
Kepada: s.tojowirjopranoto@yahoo.com
Subjek: Turkish Journal of Urology - Manuscript ID TJU-2021-0182
Balas-Ke: irmak.berberoglu@avesyayincilik.com

27-May-2021

Dear Prof. :

Your manuscript entitled "Intraurethral Lidocaine Use During Urodynamics in Female Patients: A Systematic Review and Meta-Analysis" has been successfully submitted online and is presently being given full consideration for publication in the Turkish Journal of Urology.

Your manuscript ID is TJU-2021-0182.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc04.manuscriptcentral.com/turkjurol> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc04.manuscriptcentral.com/turkjurol>.

Thank you for submitting your manuscript to the Turkish Journal of Urology.

Sincerely,
Turkish Journal of Urology Editorial Office



Dian Paramita Oktaviani Soetojo <dianvian.dianvian@gmail.com>

Fwd: Turkish Journal of Urology - Decision on Manuscript ID TJU-2021-0182.R1

1 message

Soetojo Soetojo <s.tojowirjopranoto@yahoo.com>
To: dianvian.dianvian@gmail.com

Wed, Jul 14, 2021 at 7:12 PM

Sent from my iPhone

Begin forwarded message:

From: Murat Bozlu <onbehalfof@manuscriptcentral.com>
Date: 14 July 2021 12.46.51 GMT+7
To: s.tojowirjopranoto@yahoo.com
Subject: Turkish Journal of Urology - Decision on Manuscript ID TJU-2021-0182.R1
Reply-To: muratbozlu@yahoo.com

14-Jul-2021

Dear Prof. :

Manuscript ID TJU-2021-0182.R1 entitled "Intraurethral Lidocaine Use During Urodynamics in Female Patients: A Systematic Review and Meta-Analysis" which you submitted to the Turkish Journal of Urology, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended publication, but also suggest some revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript.

To revise your manuscript, log into <https://mc04.manuscriptcentral.com/turkjurol> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

You may also click the below link to start the revision process (or continue the process if you have already started your revision) for your manuscript. If you use the below link you will not be required to login to ScholarOne Manuscripts.

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc04.manuscriptcentral.com/turkjurol?URL_MASK=50fa3baf5edb497782ffd19bc7a9e8f4

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to the Turkish Journal of Urology, your revised manuscript should be submitted by 28-Aug-2021. If it is not possible for you to submit your revision by this date, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to the Turkish Journal of Urology and I look forward to receiving your revision.

Sincerely,

Editor in Chief
Ateş KADIOĞLU
Department of Urology, İstanbul University İstanbul School of Medicine, İstanbul, Turkey

Dr. Murat Bozlu
Editor, Turkish Journal of Urology

Associate Editor Comments to Author:

Associate Editor
Comments to the Author:
The recommendations of the reviewer who proposed a major revision should be made.

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
Please address the issues raised in the first review. I suggest to also refer to the PRISMA checklist to ensure that all the required elements of systematic review reporting are incorporated.

Reviewer: 2

Comments to the Author
The manuscript "Intraurethral Lidocaine Use During Urodynamics in Female Patients: A Systematic Review and Meta-Analysis" is revised and resubmitted. Regrettably there is no document with tracked changes, but the manuscript is improved. I do not think that the manuscript can say that '...lidocaine ...is not recommended' (I do agree but) This is not a guideline (and also: lidocaine gel may be (is usually) combined with Chlorhexidine Gluconate as an antiseptic and its effect is not studied/reported). Please remove this from the abstract and the conclusion in the main text. Please also change the 'main points ' according to the earlier comments (change 'urodynamics may cause pain' and remove 'low pain threshold patients' and 'because').

Reviewer: 3

Comments to the Author
(There are no comments.)

Reviewer: 4

Comments to the Author
Authors presented their revised version of the systematic review for the effect of use of lidocain during urodynamic study.

Specific comments

Method

Still, the main drawback is that we can compare 2 groups in pain only. But we could not compare two different groups in the urodynamic patterns as they should be related to underlying disease and basic urodynamic parameters and not lidocain use. No data on this part was presented.

Results

Authors should define: [voiding efficiency]

Voiding efficiency was used under all parameters titles.?!]

Authors should correct: [Pabd Recruitment during flow Occurrence Differences Between Groups]

Authors should define: [Pabd Recruitment during flow Occurrence]

Authors should correct: [The difference of voiding efficiency between the lidocaine and placebo groups in figure 8 was insignificant (OR 4.25, 95% CI 0.76 – 23.73, p = 0.10), displayed in a forest plot using a fixed effects model due to the low level of heterogeneity (I² =14%).]

Authors should correct: [Intermittent Flow Pattern Occurrence Differences Between Groups]

Authors should correct: [Elevated EMG activity Occurrence Differences Between Groups]

In all of these variables, authors wrote the same term of voiding efficiency.

Reviewer: 5

Comments to the Author

(There are no comments.)



Dian Paramita Oktaviani Soetojo <dianvian.dianvian@gmail.com>

FW: IMPORTANT - Turkish Journal of Urology

1 message

Irmak Berberoğlu - AVES <irmak.berberoglu@avesyayincilik.com>

Fri, Sep 3, 2021 at 7:29 PM

To: "s.tojowirjopranoto@yahoo.com" <s.tojowirjopranoto@yahoo.com>

Cc: "dianvian.dianvian@gmail.com" <dianvian.dianvian@gmail.com>, "yodisoebadi@yahoo.com"

<yodisoebadi@yahoo.com>, "yudhistira.pradnyan.kloping-2020@fk.unair.ac.id" <yudhistira.pradnyan.kloping-

2020@fk.unair.ac.id>, "furqanhidayatullah26@gmail.com" <furqanhidayatullah26@gmail.com>, "zakariaaulia04@gmail.com"

<zakariaaulia04@gmail.com>

Dear Soetojo,

We are waiting for your response to the below e-mail **by today**.

Respectfully yours,

Irmak BERBEROĞLU**Publications Coordinator**irmak.berberoglu@avesyayincilik.com**AVES Author Services**

From: Irmak Berberoğlu - AVES**Sent:** Tuesday, August 24, 2021 7:11 PM**To:** s.tojowirjopranoto@yahoo.com**Subject:** IMPORTANT - Turkish Journal of Urology**Importance:** High

Dear Soetojo,

Your manuscript's publication process, which has been accepted for publication by Turkish Journal of Urology, has been started. During the pre-production checks of your manuscript, we have detected the deficiencies listed within the main text. You can find the corrections you should implement at the bottom of the page, in "Author Queries" section.

Please correct these on the attached document **by adding notes, do not make any changes on the PDF**. If you have any notes other than the ones we mentioned, please let me know.

Please respond to the document back to us **by Thursday, August 26, 2021**.

Respectfully yours,

Irmak BERBEROĐLU

Publications Coordinator

irmak.berberoglu@avesyayincilik.com

AVES Author Services

 **TJU_Soetojo_Re.pdf**
3314K



Dian Paramita Oktaviani Soetojo <dianvian.dianvian@gmail.com>

FW: TJU-2021-0182.R2 - Manuscript Proofing

1 message

Irmak Berberoğlu - AVES <irmak.berberoglu@avesyayincilik.com>

Tue, Sep 14, 2021 at 6:27 PM

To: "s.tojowirjopranoto@yahoo.com" <s.tojowirjopranoto@yahoo.com>

Cc: "dianvian.dianvian@gmail.com" <dianvian.dianvian@gmail.com>, "yodisoebadi@yahoo.com" <yodisoebadi@yahoo.com>, Yudhistira Pradnyan Kloping <yudhistira.pradnyan.kloping-2020@fk.unair.ac.id>, "furqanhidayatullah26@gmail.com" <furqanhidayatullah26@gmail.com>, "zakariaaulia04@gmail.com" <zakariaaulia04@gmail.com>

Dear Soetojo Soetojo

We are waiting for your response to the below e-mail **by today**.

Respectfully yours,

Irmak BERBEROĞLU**Publications Coordinator**irmak.berberoglu@avesyayincilik.com**AVES Author Services**

-----Original Message-----

From: Irmak Berberoğlu - AVES

Sent: Monday, September 13, 2021 5:57 PM

To: s.tojowirjopranoto@yahoo.com

Subject: FW: TJU-2021-0182.R2 - Manuscript Proofing

Importance: High

Dear Soetojo Soetojo

We are waiting for your response to the below e-mail.

Respectfully yours,

Irmak BERBEROĞLU

Publications Coordinator

irmak.berberoglu@avesyayincilik.com

AVES Author Services

-----Original Message-----

From: Irmak Berberoğlu - AVES
Sent: Thursday, September 9, 2021 12:43 PM
To: s.tojowirjoprano@yahoo.com
Subject: RE: TJU-2021-0182.R2 - Manuscript Proofing
Importance: High

Dear Soetojo Soetojo,

The PDF proof of your manuscript, which will be published in the Turkish Journal of Urology's September issue, has been sent to you in the attachment. All corrections have been implemented. We kindly ask you to control your manuscript's final PDF and respond to this e-mail by Wednesday, September 9, 2021.

Please open your article from the computer.

-----Original Message-----

From: Irmak Berberoğlu - AVES
Sent: Monday, September 6, 2021 10:28 AM
To: s.tojowirjoprano@yahoo.com
Subject: RE: TJU-2021-0182.R2 - Manuscript Proofing

Dear Soetojo Soetojo,

Thank you for your e-mail. We will implement all corrections and send the PDF back to you for your control.

Respectfully yours,

Irmak BERBEROĞLU

Publications Coordinator

irmak.berberoglu@avesyayincilik.com

AVES Author Services

-----Original Message-----

From: Soetojo Soetojo <onbehalf@manuscriptcentral.com>
Sent: Sunday, September 5, 2021 12:47 AM

To: Irmak Berberoğlu - AVES <irmak.berberoglu@avesyayincilik.com>

Subject: TJU-2021-0182.R2 - Manuscript Proofing

Dear Irmakimage.gif Berberoğlu,

We apologize for the late reply due to a technical issue on our side. We hereby attach the proofread manuscript below. These are the corrections made in the PDF file:

AQ1: ...Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol...

AQ2:

Corresponding author

First name: Soetojo

Last name: Soetojo

AQ3: Intraurethral lidocaine use during Urodynamics

AQ4: Initials are already correct

The PDF file has been sent via yudhistira.pradnyan.kloping-2020@fk.unair.ac.id.

Thank you, we hope that the article will be published soon.

Warmest regards,

Yudhistira Pradnyan Kloping on behalf of Soetojo

 **TJU_Soetojo1.pdf**
3292K