

AperTO - Archivio Istituzionale Open Access dell'Università di Torino

A Comparison of Laparoscopy and Laparotomy for the Management of Abdominal Trauma: A Systematic Review and Meta-analysis

This is the author's manuscript

Original Citation:

Availability:

This version is available <http://hdl.handle.net/2318/1565071> since 2016-06-09T13:05:50Z

Published version:

DOI:10.1007/s00268-015-3354-4

Terms of use:

Open Access

Anyone can freely access the full text of works made available as "Open Access". Works made available under a Creative Commons license can be used according to the terms and conditions of said license. Use of all other works requires consent of the right holder (author or publisher) if not exempted from copyright protection by the applicable law.

(Article begins on next page)



UNIVERSITÀ DEGLI STUDI DI TORINO

This is an author version of the contribution published on:

Questa è la versione dell'autore dell'opera:

World Journal of Surgery, 40(6):1524-1525, 2016

DOI: 10.1007/s00268-015-3354-4]

The definitive version is available at:

La versione definitiva è disponibile alla URL:

<http://link.springer.com/article/10.1007%2Fs00268-015-3354-4>

A Comparison of Laparoscopy and Laparotomy for the Management of Abdominal Trauma: A Systematic Review and Meta-analysis

- Birindelli A^{1,2}, Di Saverio S³, Agresta F⁴, Mandrioli M², Tugnoli G².
- ¹S. Orsola-Malpighi University Hospital of Bologna, Bologna, Italy.
- ²Trauma Surgery Unit, Maggiore Hospital Regional Emergency Surgery and Trauma Center - AUSL Bologna Local Health District Bologna, Bologna, Italy.
- ³Trauma Surgery Unit, Maggiore Hospital Regional Emergency Surgery and Trauma Center - AUSL Bologna Local Health District Bologna, Bologna, Italy. salo75@inwind.it.
- ⁴General Surgery Unit, Adria Hospital (RO), Adria, Italy.

On behalf of the working group for the 2015 update of the guidelines of the laparoscopic approach to acute abdomen (Società Italiana di Chirurgia Endoscopica e nuove tecnologie (SICE), Associazione Chirurghi Ospedalieri Italiani (ACOI), Società Italiana di Chirurgia (SIC), Società Italiana di Chirurgia d'Urgenza e del Trauma (SICUT), Società Italiana di Chirurgia nell'Ospedalità Privata (SICOP), and the European Association for Endoscopic Surgery (EAES)). List of collaborators are at the end of the article.

Dear Editors,

We read with great interest the systematic review and meta-analysis performed by Dr. Li et al. [1]. On the use of laparoscopy in trauma patients and we would like to raise serious concerns on the methods of this article, which may harbor major flaws affecting therefore the results and reliability itself of this meta-analysis.

We are particularly interested in this topic falling within the scope of the Consensus Conference on the use of Laparoscopy for Abdominal Emergencies and Trauma we have recently had for the 2015 update of the European Guidelines on the role of laparoscopy in abdominal emergency surgery [2].

In order to define statements which will be widely shared and scientifically supported, we have recently performed a thorough review of the relevant literature, finding that the general quality of evidence was poor and, in details, only one RCT on the subject of laparoscopy for Trauma [3] has been ever performed. We were therefore really surprised to read in the present study by Li et al. [1]. That the authors have been able to find and include up to five RCTs [3–7] and pooled the data in the meta-analysis to obtain forest

plots. We then looked up at the references of the further four RCTs [4–7] included by Li et al. and have detected some important issues.

We have carefully read both full texts of the articles by Karateke et al. [4] and by Kawahara et al. [5], and we noticed that both were prospective, non-randomized studies (in the case of Karateke et al. [4], this is clearly stated also in the title): in our opinion, this is a major fault in the selection of the clinical trials that must be clarified and led to wrong inclusion of these studies and their patients in the meta-analysis.

On the other hand, we could not find in the web search any of the other two RCTs included in the meta-analysis [6, 7]. The same problem exists with some other studies included in the manuscript [8–15]. This is probably because the Chinese Biomedical Literature database (CBM) was included in the systematic search, as stated in the meta-analysis materials and methods. These documents are only available in Chinese language. The fact that all these articles cannot be obtained and their methods and quality cannot be assessed by a third party is quite disturbing to us. In fact not having the possibility to read these studies in full may prevent the non-Chinese language readers from assessing the eligibility of these trials to be included within a proper meta-analysis, their characteristics such as quality, fitness to ethics and GCP principles, appropriateness of labeling, adequacy, methods of randomization, allocation concealments, and any biases or errors in the data reports or computations.

In conclusion, we believe that relevant flaws exist in the methods of inclusion and assessment of the studies within the meta-analysis performed by Li et al. [1]. A meta-analysis should pretend to be the highest level of scientific evidence after inclusion of high-quality and carefully assessed RCTs and this does not seem to be the case.

To date, we still feel that a proper and reliable meta-analysis and forest plots cannot be obtained for the topic of use of laparoscopy for trauma, with only one high-quality RCT [3] available from the scientific literature. We look forward to receive more evidence from Li et al. regarding their criteria of study inclusion as well as the accessibility of quality and data of the included studies. Until the methods and data used for this meta-analysis will be clarified, the relevant conclusions depicted by Li et al. do not reach enough scientific reliability and priority to be included in the Trauma section of the 2015 update of the Laparoscopy for Abdominal Emergencies European Guidelines [2].

Collaborators of the working group: Ferdinando Agresta, Gabriele Anania, Luca Ansaloni, Alberto Arezzo, Luca Baiocchi, Carlo Bergamini, Fabio Cesare Campanile, Mario Campi,

Michele Carlucci, Gianfranco Cocorullo, Salomone Di Saverio, Massimo Lupo, Antonino Mirabella, Micaela Piccoli, Mario Saia, Nereo Vettoretto, Mauro Zago.

References

1.

Li Y, Xiang Y, Wu N, Wu L, Yu Z, Zhang M, Wang M, Jiang J, Li Y (2015) A comparison of laparoscopy and laparotomy for the management of abdominal trauma: a systematic review and meta-analysis. *World J Surg* 39(12):2862–2871. doi:[10.1007/s00268-015-3212-4](https://doi.org/10.1007/s00268-015-3212-4)

2.

Agresta F, Ansaloni L, Baiocchi GL, Bergamini C, Campanile FC, Carlucci M, Cocorullo G, Corradi A, Franzato B, Lupo M, Mandalà V, Mirabella A, Pernazza G, Piccoli M, Staudacher C, Vettoretto N, Zago M, Lettieri E, Levati A, Pietrini D, Scaglione M, De Masi S, De Placido G, Francucci M, Rasi M, Fingerhut A, Uranüs S, Garattini S (2012) Laparoscopic approach to acute abdomen from the Consensus Development Conference of the Società Italiana di Chirurgia Endoscopica e nuove tecnologie (SICE), Associazione Chirurghi Ospedalieri Italiani (ACOI), Società Italiana di Chirurgia (SIC), Società Italiana di Chirurgia d'Urgenza e del Trauma (SICUT), Società Italiana di Chirurgia nell'Ospedalità Privata (SICOP), and the European Association for Endoscopic Surgery (EAES). *Surg Endosc* 26(8):2134–2164

3.

Leppäniemi A, Haapiainen R (2003) Diagnostic laparoscopy in abdominal stab wounds: a prospective, randomized study. *J Trauma* 55(4):636–645

4.

Karateke F, Ozdogan M, Ozyazici S et al (2013) The management of penetrating abdominal trauma by diagnostic laparoscopy: a prospective non-randomized study. *TJTES* 19:53–57

5.

Kawahara NT, Alster C, Fujimura I et al (2009) Standard examination system for laparoscopy in penetrating abdominal trauma. *J Trauma* 67:589–595

6.

Li X (2012) Clinical observation of traumatic rupture of laparoscopic splenectomy. China Foreign Women's Health 20:137–138

7.

Zuo C (2011) Clinical comparison between laparoscopic splenectomy and splenectomy in the treatment of traumatic splenic rupture. China Foreign Med Treat 30:22–23

8.

Yang T, Li GY, Su Z et al (2013) Comparative analysis between laparotomy and laparoscopy in blunt abdominal trauma. Clin Med China 29:1311–1313

9.

Tian L (2012) The early laparoscopic surgical exploration in intestinal injury secondary to blunt abdominal trauma. Zhejiang J Trauma Surg 17:734–736

10.

Ouyang M, Pi G, Liu L (2013) A comparative study of traumatic rupture of small intestine between laparoscopy and open surgery. Guide China Med 36:512–513

11.

Li Y, Li P, Yang Y (2013) Early diagnosis and treatment of acute blunt abdominal trauma. Chin J Med 48:60–62

12.

Liang T, Fu W (2013) Study on the application significance of laparoscope in the treatment and diagnosis of blunt abdominal trauma. Sichuan Med J 34:529–530

13.

Cai W, Wang H, Ma A et al (2011) A comparative observation between laparoscopy and laparotomy in the diagnosis and treatment of blunt abdominal trauma. China Med 6:827–828

14.

Hou Q (2010) The advantages of laparoscopy in diagnosing and treating the abdominal closed injury. J Bethune Mil Med Coll 1:13–14

15.

Zheng J (2013) Closed abdominal injury and rupture of laparoscopic and open operation curative effect analysis. *Nei Mong J Tradit Chin Med* 32:87–88