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A systematic review and meta-analysis on the effect of extraperitoneal laparoscopic lymph node dissection in patients with gynecological malignancies

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Introduction/Background: Para-aortic lymphadenectomy is performed for disease staging to tailor the optimal treatment in a plethora of gynecological malignancies such as advanced cervical, ovarian and high-risk endometrial cancer. With the advances in minimally invasive procedures, laparoscopic lymphadenectomy approaches have become the gold standard. The present study aimed to evaluate the impact of laparoscopic transperitoneal (TLL) and extraperitoneal (ELL) lymphadenectomy in patients with gynecological malignancies.

Methodology: The Medline, Scopus, Google Scholar, Cochrane CENTRAL Register of Controlled Trials and Clinicaltrials.gov databases were searched for articles published up to April 2019. Prospective and retrospective trials reporting outcomes for women with gynecological malignancies who underwent laparoscopic extraperitoneal or transperitoneal lymphadenectomy were enrolled. Statistical meta-analysis was performed using the RevMan 5.3 software.

Results: Of the 137 records screened, 7 were eligible for meta-analysis. A total of 608 women (329 TLL and 279 ELL) were included in the meta-analysis. Despite the fact that a significantly prolonged lymphadenectomy time was observed in TLL when compared to ELL (284 patients MD 35.18 min 95% CI 5.59 to 64.76 p=0.02) total operative time was not different among the two groups (407 patients MD -10.43 min 95% CI -20.55 to 41.42 p=0.51). No difference was observed with regards to postoperative complications, hospital stay and mean number of resected lymph nodes.

Characteristics of the included studies and patients

Author, year	Country	Type of study	MINORS	No. of patients	Type of malignancy (n)	Type of lymphadenectomy
Dı´az-Feijoo et al, 2016	Spain & USA	PS RCT	22	29 vs. 31	EC: 22 vs. 26 OC: 7 vs. 5	Para-aortic supra-and inframesenteric
Naoura et al, 2016	France	RS	17	62 vs. 67	CC: 22 vs. 41 EC: 29 vs. 22 OC: 11 vs. 1 VC: 0 vs. 3	Para-aortic
O'Hanlan et al, 2015	USA	RS	18	36 vs. 79	CC: 0 vs. 4 EC: 22 vs. 53 OC: 16 vs. 20	Para-aortic up to infra-renal aorta
Pakish et al, 2014	USA	RS	17	108 vs. 34	EC 108 vs. 34	Para-aortic up to the renal vessels
Akladios et al, 2013	France	RS	17	51 vs. 21	CC: 22 vs. 16 OC:20 vs. 3 EC: 8 vs. 1	Trasnperitoneal: up to the inferior mesenteric artery Extraperitoneal: up to the left renal vein
Morales et al, 2013	Spain & Germany	RS	17	19 vs. 28	EC: 9 vs. 6 OC: 7 vs. 3 CC: 3 vs. 19	Para-aortic up to the level of renal vessels
Flemming et al, 2012	USA	RS	17	24 vs. 19	EC	Para-aortic Inferior mesenteric artery

PS: Prospective, RS: Retrospective, RCT: Randomized Control Trial; MINORS: Methodological Index for Non-Randomized Studies, EC: Endometrial cancer, OC: Ovarian cancer, CC: Cervical cancer, VC: Vulvar cancer

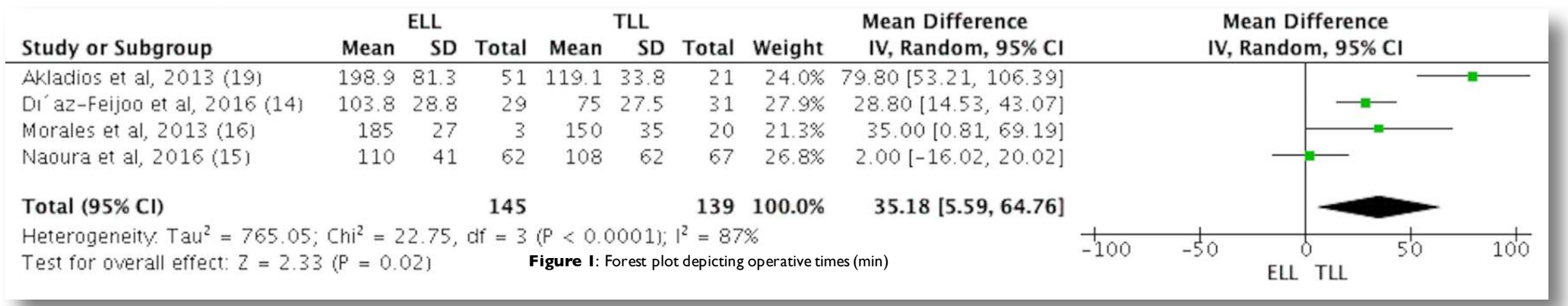

Figure 1: Forest plot depicting operative times (min)

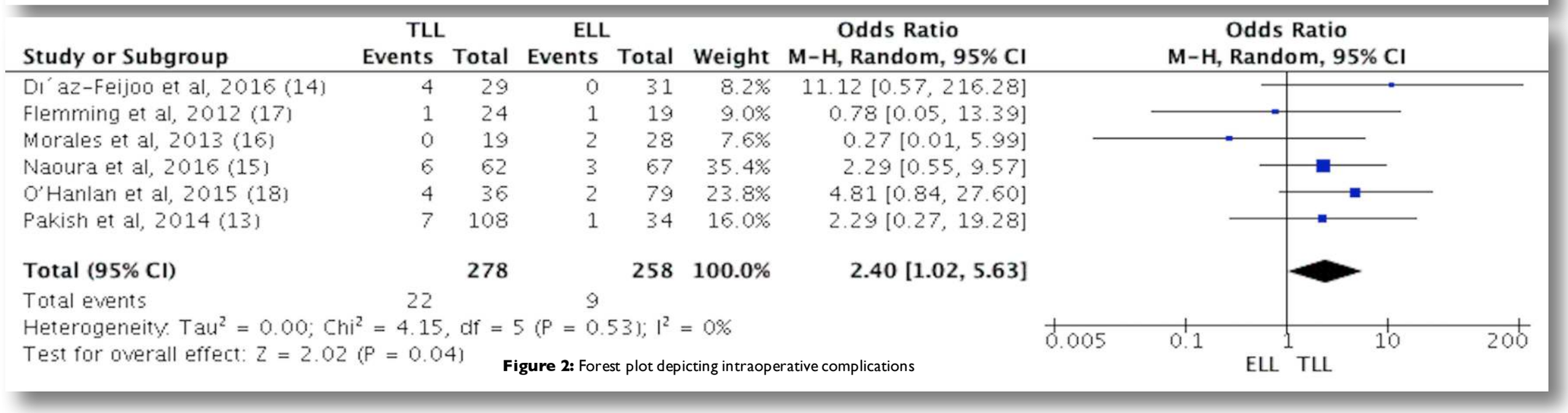

Figure 2: Forest plot depicting intraoperative complications

Conclusions: ELL is a safe and feasible. It presents with favorable outcomes in terms of shorter lymphadenectomy times and improved intraoperative outcomes as well as comparable to TLL lymph node yield**.** Further larger-volume studies are warranted to define the optimal approach in patients with gynecological malignancies.

References

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