SUPPLEMENTARY APPENDIX

Database	Search Strategy	Results
PubMed	((((("erector"[All Fields] OR "erectores"[All Fields] OR	1302
	"erectors"[All Fields]) AND ("spine"[MeSH Terms] OR	
	"spine"[All Fields] OR "spines"[All Fields] OR "spine s"[All	
	Fields]) AND ("aircraft"[MeSH Terms] OR "aircraft"[All	
	Fields] OR "plane"[All Fields] OR "planes"[All Fields]) AND	
	("block"[All Fields] OR "blocked"[All Fields] OR	
	"blocking"[All Fields] OR "blockings"[All Fields] OR	
	"blocks"[All Fields])) OR ("ultrasound-guided"[All Fields]	
	AND ("erector" [All Fields] OR "erectores" [All Fields] OR	
	"erectors"[All Fields]) AND ("spine"[MeSH Terms] OR	
	"spine"[All Fields] OR "spines"[All Fields] OR "spine s"[All	
	Fields]) AND ("aircraft"[MeSH Terms] OR "aircraft"[All	
	Fields] OR "plane" [All Fields] OR "planes" [All Fields]) AND	
	("block"[All Fields] OR "blocked"[All Fields] OR	
	"blocking"[All Fields] OR "blockings"[All Fields] OR	
	"blocks"[All Fields]))) AND (("laparoscopes"[MeSH Terms]	
	OR "laparoscopes" [All Fields] OR "laparoscope" [All Fields]	
	OR "laparoscopical" [All Fields] OR "laparoscopically" [All	
	Fields] OR "laparoscopics"[All Fields] OR	
	"laparoscopy" [MeSH Terms] OR "laparoscopy" [All Fields] OR	
	"laparoscopic"[All Fields]) AND ("nephrectomy"[MeSH	
	Terms] OR "nephrectomy"[All Fields] OR	
	"nephrectomies"[All Fields]))) OR ("nephrectomy"[MeSH	
	Terms] OR "nephrectomy"[All Fields] OR	
	"nephrectomies"[All Fields])	
Cochrane	(((erector spine plane block) OR (ultrasound-guided erector	824
Central	spine plane block)) AND (laparoscopic nephrectomies)) OR	
	(nephrectomies)	

Embase	(((erector spine plane block) OR (ultrasound-guided erector spine plane block)) AND (laparoscopic nephrectomies)) OR (nephrectomies)	1324
Web of Science	(((erector spine plane block) OR (ultrasound-guided erector spine plane block)) AND (laparoscopic nephrectomies)) OR (nephrectomies)	599

Supplementary table 1 Detailed search strategy. MeSH: Medical education subject heading

Author, Year	Patient-Controlled Analgesia (PCA					
	ESPB	Control				
	Mean \pm SD	$Mean \pm SD$				
Ayhan Sahin 2022 [22]	114.7 ± 4.0	212 ± 26.6				
ZZ. Xu, 2023 [26]	0.02 ± 0.02965	0.025 ± 0.0333				
Özlem Özkalayci, 2023 [23]	33.3 ± 21.4	37.5 ± 18.5				
Meryem Onay, 2023 [25]	20.95 ± 12.40	25.05 ± 13.60				
Ming Yang, 2024 [24]	-	-				
Erkan Atici, 2024 [21]	16.8 ± 4.13	33.61 ± 6.91				
Zhen Zhang 2024 [46]	-	-				
Nevzat Ozfirat [47]	-	-				
Sekar Loganathan [48]	7 ± 2.32	14 ± 2.32				

Supplementary table 2. Primary outcome of the included studies. ESPB erector spinae plane block, SD standard deviation

Author, Year	Dischar (Da	ge Time ys)	Nausea an	d vomiting	Post-operative analgesia requirement		
	Mean	\pm SD	Mean	$1 \pm SD$	Ev	vents	
	ESPB	Control	ESPB	Control	ESPB	Control	
Ayhan Sahin 2022 [22]	3.5 ± 1.115	4 ± 1.443	0 ± 0.25	0 ± 0.25	1	4	

ZZ. Xu, 2023 [26]	6 ± 1.48	6 ± 2.22	0.1807 ± 3.5	0.241 ± 3.89	11	17
Özlem Özkalayci, 2023 [23]	_	-	-	-	_	-
Meryem Onay, 2023 [25]	_	_	-	-	-	-
Ming Yang, 2024 [24]	-	-	0.17 ± 0.49	0.04 ± 0.21	-	-
Erkan Atici, 2024 [21]	3.05 ± 0.22	3.15 ± 0.37	0.45 ± 0.497	0.9 ± 0.3	7	19
Zhen Zhang 2024 [46]	4 ± 1.52	4 ± 1.52	-	-	3	4
Nevzat Ozfirat [47]	-	-	-	-	23	0
Sekar Loganathan [48]	-	-	-	-	-	-

Supplementary table 3. Secondary outcomes of included studies. ESPB erector spinae plane block, SD standard deviation

Supplementary table 4 GRADE TABLE

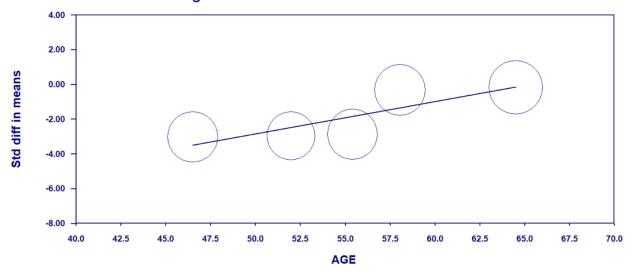
Certain	Certainty assessment						№ of patients		Effect		Cer	Imp
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other consideration s	ESPB	Control	Re lat ive (95 % CI	Absolute (95% CI)	tain ty	orta nce
700)			
PCA	1	I		1	1	T		r	1	1		
6	randomised	not	not serious	not serious	not serious	all plausible	212	215	-	MD 14.24	\oplus	CRI
	trials	serious				residual				lower	\oplus	TIC
						confounding				(20.66 lower	\oplus	AL
						would suggest				to 7.83 lower)	\oplus	
						spurious effect,				,	Hig	
						while no effect					h	
						was observed					11	
PCA - F	SPB vs Mort	hine		<u> </u>	<u> </u>	,, as coserved	<u> </u>				1	1
1 011 1	ST 2 (5 10101)	,,,,,,,,										

4	randomised trials	not serious	not serious	not serious	not serious	all plausible residual confounding would suggest spurious effect, while no effect was observed	99	102	-	MD 8.78 lower (15.34 lower to 2.22 lower)	⊕ ⊕ ⊕ Hig h	CRI TIC AL
PCA - F	ESPB vs analg	esia othe	r than morphir	ie	<u>I</u>	1		l	<u>l</u>			
2	randomised trials	not serious	not serious	not serious	not serious	all plausible residual confounding would suggest spurious effect, while no effect was observed	113	113	-	MD 48.26 lower (143.6 lower to 47.09 higher)	⊕ ⊕ ⊕ Hig h	CRI TIC AL
Dischar	ge time											
4	randomised trials	not serious	not serious	not serious	not serious	none	188	188	-	MD 0.11 lower (0.27 lower to 0.06 higher)	⊕ ⊕ ⊕ Hig h	CRI TIC AL
Nausea	and Vomiting	7										
4	randomised trials	not serious	not serious	not serious	not serious	none	156	156	-	MD 0.09 lower (0.36 lower to 0.17 higher)	⊕ ⊕ ⊕ Hig h	CRI TIC AL
	erative Anal	gesia Req	uirement									
5	randomised trials	not serious	not serious	not serious	not serious	none	45/213 (21.1%)	44/213 (20.7%)	O R 0.8	27 fewer per 1,000 (from 181	⊕ ⊕ ⊕	CRI TIC AL

				4	fewer to 437	\oplus	
				(0.	more)	Hig	
				10		h	
				to			
				6.9			
				4)			

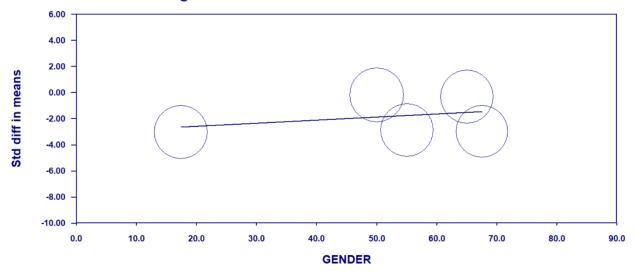
CI: confidence interval; MD: mean difference; OR: odds ratio

Regression of Std diff in means on AGE



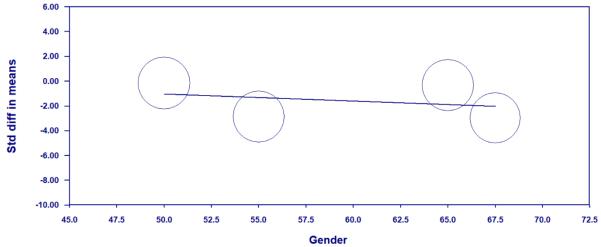
Supplementary figure 1 – Scatter plot for the effect of age on the outcome PCA.

Regression of Std diff in means on GENDER



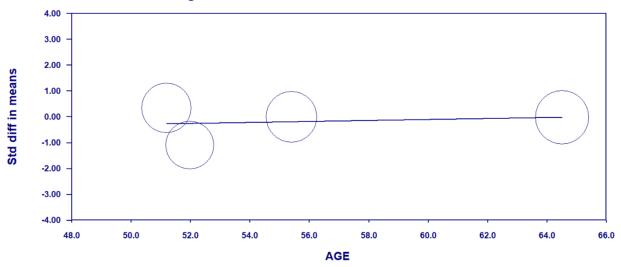
Supplementary figure 2 – Scatter plot for the effect of gender on the outcome PCA.

Regression of Std diff in means on Gender

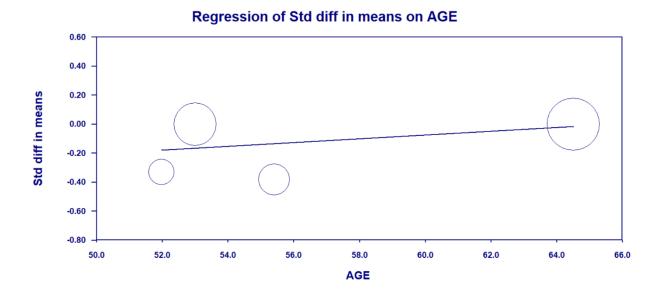


Supplementary figure 3 – Scatter plot for the effect of age on the outcome nausea and vomiting.

Regression of Std diff in means on AGE

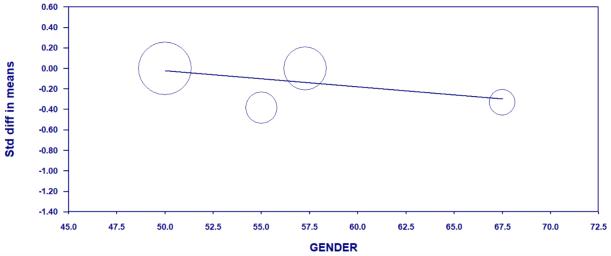


Supplementary figure 4 – Scatter plot for the effect of gender on the outcome of Nausea and Vomiting.



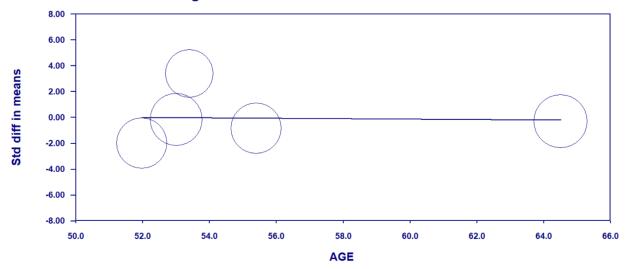
Supplementary figure 5 – Scatter plot for the effect of age on the outcome of Discharge Time.

$\label{eq:Regression} \textbf{Regression of Std diff in means on GENDER}$



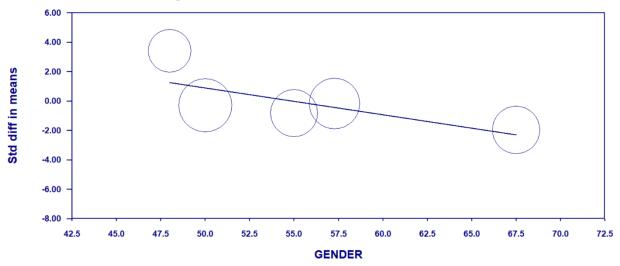
Supplementary figure 6 – Scatter plot for the effect of gender on the outcome of Discharge Time.

Regression of Std diff in means on AGE

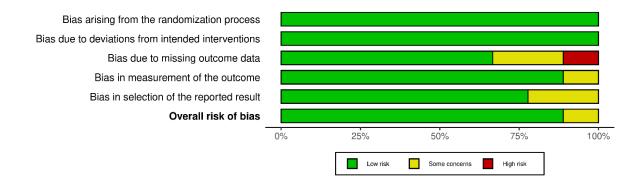


Supplementary figure 7 – Scatter plot for the effect of age on the outcome of Post-operative analgesia requirement.

Regression of Std diff in means on GENDER



Supplementary figure 8 – Scatter plot for the effect of gender on the outcome of Discharge Time.



Supplementary figure 9 – Summary plot showing the proportion of studies with low risk, some concerns, and high risk of bias across each ROB2 domain.

Supplementary figure 10. Funnel Plots of Primary Outcomes and Secondary Outcomes.

