

Varicocelectomia e Alterações Seminais

TIAGO MAGALHÃES Fellow Andrologia 2024

Varicocelectomia e Oligospermia

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ORIGINAL ARTICLE



Effect of microsurgical varicocelectomy on fertility outcome and treatment plans of patients with severe oligozoospermia:

An original report and meta-analysis

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		Sample	Surgical			Newcastle-Ottawa Scale ^a		
Study	Study design	size	procedure	Laterality	Grades	Selection	Comparability	Outcome
Gupta et al. (2017)	Retrospective	35	MSV	Unilateral (85.7%) Bilateral (14.3%)	I (27.8%), II (30.8%), III (41.4%)	***	-	***
Dubin et al. (2017)	Prospective	17	MSV	Unilateral (64.7%) Bilateral (35.3%)	I (52.9%), II (29.4%), III (17.7%)	***	-	***
Enatsu et al. (2014)	Retrospective	102	MSV	Unilateral (80.4%) Bilateral (19.6%)	I (7.8%), II (38.2%), III (53.9%)	***	-	***
Almekaty et al. (2019)	Prospective	302	MSV	Unilateral (70%) Bilateral (30%)	II (30%), III (70%)	***	-	***
Masterson et al. (2019)	Retrospective	33	MSV	-	-	***	-	***
Leung et al. (2013)	Case series	20	MSV	Unilateral (100%)	II (40%), III (60%)	***	-	***
Ishikawa et al., (2008)	Case series	6	Low ligation	-	-	***	-	***
Current study	Retrospective	85	MSV	Unilateral (69.4%) Bilateral (30.6%)	I (19%), II (36%), III (45%)	***	-	***

Abbreviation: MSV, microsurgical subinguinal varicocelectomy.

^aSelection of study groups (0–3 stars), comparability of the groups (0–2 stars) and ascertainment of exposure or outcome (0–3 stars).

ORIGINAL ARTICLE



Effect of microsurgical varicocelectomy on fertility outcome and treatment plans of patients with severe oligozoospermia:

An original report and meta-analysis 5mi/ml

Ahmad Majzoub^{1,2,3} | Haitham ElBardisi^{1,2} | Simryn Covarrubias⁴ | Nicole Mak⁵ | Ashok Agarwal³ | Ralf Henkel^{3,6,7} | Sami ElSaid^{1,2} | Ahmad H. Al-Malki^{1,8} | Mohamed Arafa^{1,2,9}

Concentração

Study name	Statistics for each study			<u>y</u>		
_	ifference in means	Lower limit	Upper limit	p-Value	Total	Relative weight
(a) Sperm concentration						
Gupta et al. 2017	11.830	1.870	21.790	0.020	35	2.0
Dubin et al. 2017	4.300	2.014	6.586	0.000	17	21.9
Enatsu et al. 2014	9.200	4.437	13.963	0.000	102	7.5
Almekaty et al. 2019	6.800	3.194	10.406	0.000	302	12.1
Leung et al. 2013	4.000	2.248	5.752	0.000	20	28.3
Ishikawa et al. 2007	6.900	3.446	10.354	0.000	54	12.9
Current Study	6.010	2.922	9.098	0.000	85	■ 15.1
Random effe	ct 5.642	4.195	7.090	0.000	615	•

Test for heterogeneity: Q-value=8.75, df(Q)=6 (p=0.188), I2=31.47 Test for overall effect Z=7.64 (p<0.001)

Decrease

Increas e

ORIGINAL ARTICLE



Effect of microsurgical varicocelectomy on fertility outcome and treatment plans of patients with severe oligozoospermia: An original report and meta-analysis < 5 mi/ml

Ahmad Majzoub^{1,2,3} | Haitham ElBardisi^{1,2} | Simryn Covarrubias⁴ | Nicole Mak⁵ | Ashok Agarwal³ | Ralf Henkel^{3,6,7} | Sami ElSaid^{1,2} | Ahmad H. Al-Malki^{1,8} | |

Motilidade

	Statistics for each study					
	ifference n means	Lower limit	Upper limit	p-Value	Total	
b) Total motility						
Gupta et al. 2017	9.720	5.047	14.393	0.000	35	🖶
Dubin et al. 2017	12.000	3.948	20.052	0.003	17	-
Enatsu et al. 2014	9.400	3.484	15.316	0.002	102	-≣-
Almekaty et al. 2019	21.200	9.958	32.442	0.000	302	-
Leung et al. 2013	7.000	3.934	10.066	0.000	20	
Ishikawa et al. 2007	-3.450	-7.489	0.589	0.094	54	
Current Study	6.320	2.268	10.372	0.002	85	
Random effe	ct 7.772	3.248	12.297	0.001	615	•

Test for overall effect Z=3.36 (p=0.001)

Decrease In crease

ORIGINAL ARTICLE

Test for overall effect Z=4.36 (p<0.001)



Effect of microsurgical varicocelectomy on fertility outcome and treatment plans of patients with severe oligozoospermia:

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5mi/ml

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TMSC

erence								
neans	Lower limit	Upper limit	p-Value	Total				
:								
6.060	1.993	10.127	0.003	17	1			5
10.700	0.904	20.496	0.032	33		-	-	1:
11.530	5.605	17.455	0.000	85		-		3
8.438	4.648	12.228	0.000	135		∢		
	160 27-	0.0001.10	20.70		-40.00 -20	.00 0.00	20.00	40.00
	6.060 10.700 11.530 8.438	6.060 1.993 10.700 0.904 11.530 5.605 8.438 4.648	6.060 1.993 10.127 10.700 0.904 20.496 11.530 5.605 17.455 8.438 4.648 12.228	6.060 1.993 10.127 0.003 10.700 0.904 20.496 0.032 11.530 5.605 17.455 0.000	6.060 1.993 10.127 0.003 17 10.700 0.904 20.496 0.032 33 11.530 5.605 17.455 0.000 85 8.438 4.648 12.228 0.000 135	6.060 1.993 10.127 0.003 17 10.700 0.904 20.496 0.032 33 11.530 5.605 17.455 0.000 85 8.438 4.648 12.228 0.000 135	6.060 1.993 10.127 0.003 17 10.700 0.904 20.496 0.032 33 11.530 5.605 17.455 0.000 85 8.438 4.648 12.228 0.000 135	6.060 1.993 10.127 0.003 17 10.700 0.904 20.496 0.032 33 11.530 5.605 17.455 0.000 85 8.438 4.648 12.228 0.000 135

Decrease

increase

ORIGINAL ARTICLE



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5mi/ml

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Discussão

TMSC > 5mi

TMSC > 9mi Gestação Natural

Melhora na TMSC



Possibilidades novos cenários*

Varicocelectomia e Azoospermia

Undergoing varicocele repair before assisted reproduction improves pregnancy rate and live birth rate in azoospermic and oligospermic men with a varicocele: a systematic review and meta-analysis

E. Will Kirby, M.D., Laura Elizabeth Wiener, M.S., Saneal Rajanahally, M.D., Karen Crowell, M.L.I.S., and Robert M. Coward, M.D.

^a Department of Urology and ^b Department of Biostatistics, UNC Gillings School of Global Public Health, Chapel Hill, North Carolina; ^d UNC Health Sciences Library, University of North Carolina (UNC) School of Medicine, Chapel Hill, North Carolina; ^e UNC Fertility, Raleigh, North Carolina; and ^c Department of Urology, University of Washington, Seattle, Washington

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Varicocele Clínica



Alteração seminal

Varicocelectomia

X Varicocele persistente



Tx Gravidez

Tx Nascidos Vivos

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7 estudos

Author/year	Varicocele grade	Semen analysis characteristics	ART method	Cohort size
Gokce/2013	All grades	Oligospermia asthenospermia, teratospermia (any combination of)	IVF/ICSI	306
Esteves/2010	All grades	Oligospermia asthenospermia, teratospermia (any combination of)	IVF/ICSI	242
Pasqualotto/2012	Only grade III	"Poor semen parameters"	IVF/ICSI	248
Ashkenazi/1989	All grades	"Subfertile Semen"	IVF	22
Haydardedeoglu/2010	Only grade III	Nonobstructive azoospermia	IVF/ICSI with TESE	269
Inci/2009	All grades	Nonobstructive azoospermia	IVF/ICSI with TESE	96
Daitch/2001	All grades	Oligospermia asthenospermia, teratospermia (any combination of)	IUI	58

Note: ART = assisted reproductive technology; ICSI = intracytoplasmic sperm injection; TESE = testicular sperm extraction.

Kirby. ART outcomes after varicocele repair. Fertil Steril 2016.

^a Department of Urology and ^b Department of Biostatistics, UNC Gillings School of Global Public Health, Chapel Hill, North Carolina; ^d UNC Health Sciences Library, University of North Carolina (UNC) School of Medicine, Chapel Hill, North Carolina; ^e UNC Fertility, Raleigh, North Carolina; and ^c Department of Urology, University of Washington, Seattle, Washington

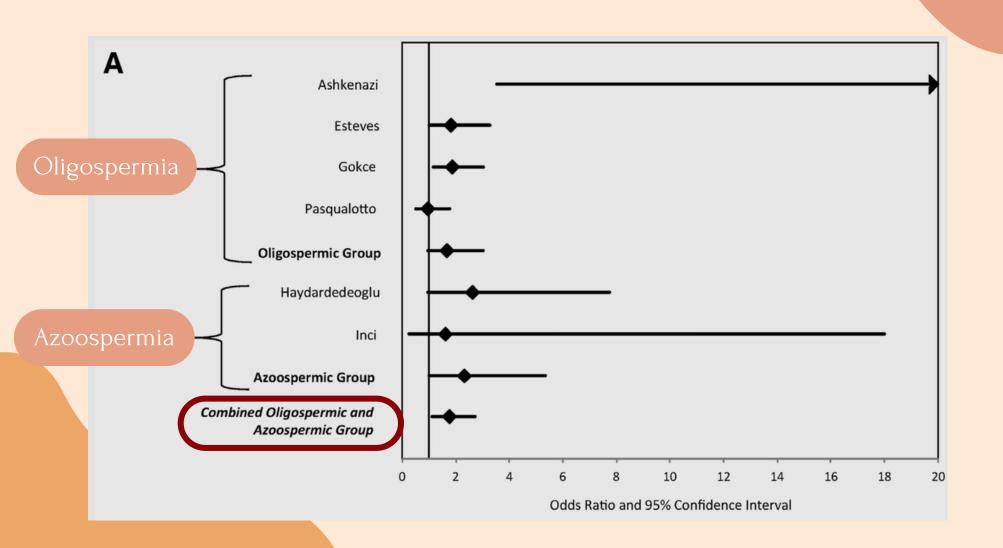
Odds ratios comparing varicocele repair with persistent varicocele.

Tx Gravidez

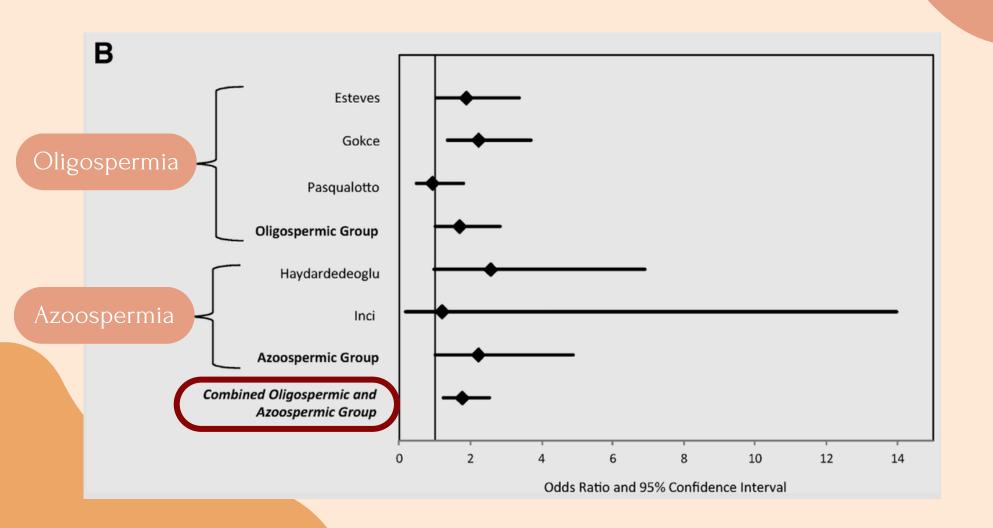
Patient group	Odds ratio	95% confidence interval	P value
Oligospermia Ashkenazi Esteves Gokce Pasqualotto Oligospermic group Azoospermia	Infinity 1.829 1.872 0.96 1.695	(3.526, Infinity) (1.026, 3.275) (1.155, 3.035) (0.522, 1.792) (0.951, 3.020)	.0733
Haydardedeoglu Inci Azoospermic group Combined oligospermia and azoospermia Tx Nascidos Vivos	2.621 1.604 2.336 1.760	(0.947, 7.743) (0.244, 18.108) (1.022, 5.342) (1.139, 2.720)	.0444 .0109
Oligospermia			
Esteves Gokce Pasqualotto Oligospermic group	1.873 2.227 0.915 1.699	(1.038, 3.365) (1.348, 3.697) (0.475, 1.802) (1.020, 2.831)	.0417
Azoospermia Haydardedeoglu Inci Azoospermic group Combined oligospermia and azoospermia	2.559 1.212 2.208 1.761	(0.971, 6.903) (0.179, 13.993) (0.994, 4.904) (1.223, 2.537)	.0518 .0024

Kirby. ART outcomes after varicocele repair. Fertil Steril 2016.

Tx Gravidez



Tx Nascidos Vivos



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Discussão

Fragmentação de DNA



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