

#537: Erbium-YAG LASER Therapy for Pelvic Organ Prolapse: Treatment Success and Risk Factors for Treatment Failure

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Hypothesis / aims of study

LASER energy causes collagen remodeling and neo-collagenesis resulting in mucosal contraction and tightening (1). Erbium Yag LASER therapy is proven to be a safe and effective treatment option for many gynecologic disorders such as stress urinary incontinence, vaginal laxity, genitourinary syndrome of menopause, and pelvic organ prolapse (2).

In this presented study, treatment success and risk factors of treatment failure with Er-YAG LASER for pelvic organ prolapse are investigated. LASER energy causes collagen remodeling and neo-collagenesis resulting in mucosal contraction and tightening (1). Erbium Yag LASER therapy is proven to be a safe and effective treatment option for many gynecologic disorders such as stress urinary incontinence, vaginal laxity, genitourinary syndrome of menopause, and pelvic organ prolapse (2). In this presented study, treatment success and risk factors of treatment failure with Er-YAG LASER for pelvic organ prolapse are investigated.

Study design, materials and methods

57 patients with mild pelvic organ prolapse (grade 2 or lower prolapse on Baden Walker scale) who had undergone ER-YAG LASER therapy with FOTONA Smooth mode between 2018-2023, were included in the study. Ethical Committee approval was obtained.

3 sessions with one month intervals were applied. The Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ 12), Female Sexual Function Index (FSFI), Prolapse Related Quality of Life Questionnaire (PQOL), and King's Health Questionnaire (KHQ) were filled at the first visit and 6 month follow ups. Primary outcomes were patient satisfaction and need for surgery or pessary use. Patient satisfaction was determined based on a scale of 5, 4 and 5 out of 5 was considered satisfied.

Results and interpretation

Demographic characteristics were comparable between all groups. The average age was 49.58 ± 11.30 (27-70), BMI was 28.96 ± 4.34 (19.00-39.35) and 40% of patients were postmenopausal.

80.7% of patients were satisfied at one month follow up after 3 sessions. 21.3 % of patients needed at least one (mean 1.8; min 1, max 3) repeated application at the sixth month or first year follow up. 45.6 % of patients are satisfied with the therapy to date.

The need for surgery or pessary use is found to be 33.3%. Among these patients, age is greater (mean 47.55 vs 53.63, $p=0.04$) and pelvic floor muscle strength is lower (mean 12.67 vs 19.90, $p=0.02$) compared to the group without the need for surgery or pessary use. No statistical differences were found in body mass index, menopausal state, compartment of prolapse, or parity between these groups.

Prolapse Related Quality of Life Questionnaire and King's Health Questionnaire total score and subdomain scores of incontinence impact, physical limitations, personal relationships, emotions, sleep and severity showed statistically significant improvement after Er-YAG LASER therapy (Table 1). No significant differences between pre and post results of FSFI and PISQ 12 were found.

Conclusions

Er-YAG LASER therapy for mild pelvic organ prolapse is an effective treatment option. This therapy caused significant improvement in patients' general health and prolapse related quality of life. On the other hand, sexual function, evaluated by PISQ12 and FSFI scores showed no improvement after therapy. Further studies focusing on LASER's effect on sexual function, including histologic studies should be conducted.

Even though LASER therapy appears to be gaining popularity with its minimally invasive approach, patient selection is critical for treatment success. In this presented study, advanced age and lower pelvic floor muscle strength are found to be risk factors for treatment failure and the need for surgery or pessary use. According to these findings, patients with advanced age and low pelvic floor muscle strength might be suitable candidates for different treatment options.

Er-YAG LASER therapy is considered an effective treatment option with high satisfaction rates for mild pelvic organ prolapse. Proper patient selection is a key factor for treatment success.

Table 1: Questionnaire Scores Before and After Er-YAG LASER Treatment (n=57)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
P-QOL	pre-post PQOL	114.60462	188.25060	36.91898	38.56855	190.64068	3.104	25	.005
PISQ12	pre-post PISQ12	-.42857	3.79705	1.01480	-2.62092	1.76378	-.422	13	.680
KING's Health	pre-post King's Health questionnaire (KHQ)	107.64038	250.82673	44.34032	17.20770	198.07305	2.428	31	.021
	-KHQ 1 pre-post KHQ general health	1.56250	21.00067	3.71243	-6.00905	9.13405	.421	31	.677
	-KHQ 2 pre-post KHQ incontinence impact	21.78938	36.43821	6.44143	8.65200	34.92675	3.383	31	.002
	-KHQ 3 pre-post KHQ role limitations	10.89750	33.75064	5.96633	-1.27090	23.06590	1.827	31	.077
	-KHQ 4 pre-post KHQ physical limitations	17.66125	42.31882	7.48098	2.40369	32.91881	2.361	31	.025
	-KHQ 5 pre-post KHQ social limitations	-.70875	98.69287	17.44660	-36.29132	34.87382	-.041	31	.968
	-KHQ 6 pre-post KHQ personal relations	10.36406	27.97732	4.94574	.27716	20.45096	2.096	31	.044
	-KHQ 7 pre-post KHQ emotions	14.15688	33.09778	5.85092	2.22385	26.08990	2.420	31	.022
	-KHQ 8 pre-post KHQ sleep	13.49406	24.43507	4.31955	4.68428	22.30384	3.124	31	.004
	-KHQ 9 pre-post KHQ severity	17.85688	30.99269	5.47878	6.68282	29.03093	3.259	31	.003
FSFI	pre-post FSFI	-.38889	3.05346	1.01782	-2.73599	1.95821	-.382	8	.712
	-FSFI 1 pre-post FSFI desire	-.26667	1.00000	.33333	-.50200	1.03533	-.800	8	.447
	-FSFI 2 pre-post FSFI arousal	-.26667	.85440	.28480	-.92342	.39008	-.936	8	.377
	-FSFI 3 pre-post FSFI lubrication	-.30000	1.05000	.35000	-1.10710	.50710	-.857	8	.416
	-FSFI 4 pre-post FSFI orgasm	.08889	.59255	.19752	-.36658	.54436	.450	8	.665
	-FSFI 5 pre-post FSFI satisfaction	-.04444	1.00885	.33628	-.73103	.81991	-.132	8	.898
	-FSFI 6 pre-post FSFI pain	-.22222	1.29786	.43262	-1.21985	.77540	-.514	8	.621

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