National Institute for Health and Care Excellence

IP1542 Transvaginal laser therapy for stress urinary incontinence

IPAC date: 11 March 2021

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
1	Consultee 1 Specialist Society BSUG	**General**	IP1542 Transvaginal laser therapy for stress urinary incontinence: • The IPG considers vaginal laser in the treatment of SUI but does not give consideration to other energy-based devices such as Radiofrequency treatment which is possibly used more than laser commercially for this indication.	Thank you for your comment. The remit of this guidance is transvaginal laser therapy. Other energy-based devices for this indication would be considered for guidance if they were notified to the IP programme.
2	Consultee 1 Specialist Society BSUG	**Overview**	• In the heading “What the procedure involves” mentions that typically 3 sessions would be performed, but this tends to range from 3-5 and often top ups are offered. There is a need for standardisation of protocols. Many of the studies used different treatment intervals and settings.	Thank you for your comment. The wording in the overview has been changed to ‘typically 3 to 5 sessions, with further top up sessions as necessary’. Section 1.2 of the draft guidance states that further research should report the type of laser and energy used and treatment protocols.
3	Consultee 1 Specialist Society BSUG	**1.1**	• The benefit of using laser for stress urinary incontinence remains doubtful hence for this indication should only be restricted for research purposes. • Making practical recommendations is likely to be more beneficial as laser is already being widely used “off label” and no doubt will continue to be so despite the guideline. There should be special arrangements in place regarding	Thank you for your comment. Consultee agrees with main recommendation. The draft recommendations state that this procedure should only be done in the

			consent of patients regarding its limited evidence and maintenance of a database of treatment and regimes used (laser type, power, frequency, pulses, passes etc) as well as side effects and outcomes (upto 24 months).	context of research. The procedure should therefore be done under the scrutiny and governance of a research ethics committee, which will include appropriate patient information and consent.
4	Consultee 1 Specialist Society BSUG	**1.1**	• We would request NICE make a recommendation for a called grant to investigate this intervention. We would also propose that generating reliable data can take several years however gathering observational data should be a priority for anyone undertaking these procedures as they are sufficiently established in clinical practice and are being widely used. Unless there is a mandate to stop use this will continue, so it makes more sense to encourage data collection and reporting of outcomes.	Thank you for your comment. The committee considered this comment but decided not to change the guidance. The draft recommendations state that this procedure should only be done in the context of research. The procedure should therefore be done under the scrutiny and governance of a research ethics committee, which will include appropriate patient information and consent.
5	Consultee 1 Specialist Society BSUG	**1**	• The IPG does not discuss who should be performing these studies. There should be guidance on qualifications and training those undertaking these procedures should be able to demonstrate as well as the outcomes they should be required to collect as part of this process. There is a need for requirement for appropriate training before using the device. In particular anyone using the device should be a) able to make the appropriate diagnosis, b) examine the patient appropriately and c) understand and deal with any potential complications. Although the scientific papers are conducted largely by gynaecologists, many of the commercial users of these devices are from a wide variety of health care disciplines such as primary care and dermatology, some are done by nurses or allied health assistants and in some instances by aesthetic	Thank you for your comment. The draft recommendations state that this procedure should only be done in the context of research. The procedure should therefore be done under the scrutiny and governance of a research ethics committee.

			practitioners with no medical qualification. The situation is even less regulated in many other countries.	
6	Consultee 1 Specialist Society BSUG	**1.2**	• The duration of follow up was very short in most studies. • The emphasis needs to be on long term safety and outcome as was evident from the Cumberlege review into the use of mesh. The longer follow ups in the studies used for evidence is up to 24 months but it would be interesting to know if the use of Laser influences the quality of the vaginal skin and also its impact for any future surgical interventions. It is therefore important to know that the use of Laser will not limit future surgical interventions or cause more damage.	Thank you for your comment. Section 1.2 of the draft guidance states that further research should report long-term safety and efficacy outcomes.
7	Consultee 1 Specialist Society BSUG	**3.5**	• Physiotherapy and pelvic floor exercises should be mandatory before proceeding to laser and we are in complete agreement with this recommendation.	Thank you for your comment. Section 3.5 of the draft guidance states 'The committee noted that continuation of pelvic floor exercises is important in the management of stress urinary incontinence.'
8	Consultee 2 NHS Professional	**1.1**	I am in agreement with the preliminary recommendations. I have recently reviewed the literature on SUI and agree the current data is inadequate to recommend widespread use. Philips C, Hillard T, Salvatore S et al: J Obstet Gynaecol 2020:251:146-55 Hillard TC, Nappi R Climacteric 2020;23 (supp 1):S1-S2	Thank you for your comment. Consultee agrees with main recommendation. The cited review is included in the appendix of the overview.
9	Consultee 2 NHS Professional	**1.2**	Recommendation 1.2: There is a need for standardisation of protocols. Many of the studies used different treatment intervals and settings often at the discretion of the operator. This makes analysis and comparison of results difficult.	Thank you for your comment. Section 1.2 of the draft guidance states that further research should report the

				type of laser and energy used and treatment protocols.
10	Consultee 2 NHS Professional	**1**	I would welcome an additional recommendation on who should do these procedures. There is a need for requirement for appropriate training before using the device. In particular anyone using the device should be a) able to make the appropriate diagnosis, b) examine the patient appropriately and c) understand and deal with any potential complications. Although the scientific papers are conducted largely by gynaecologists, many of the commercial users of these devices are from a wide variety of health care disciplines such as primary care and dermatology, some are done by nurses or allied health assistants and in some instances by aesthetic practitioners with no medical qualification. The situation is even less regulated in many other countries.	Thank you for your comment. The draft recommendations state that this procedure should only be done in the context of research. The procedure should therefore be done under the scrutiny and governance of a research ethics committee.
11	Consultee 2 NHS Professional	**3.5**	Committee Comment 3.5: Physiotherapy and pelvic floor exercises should be mandatory before proceeding to laser. If laser is to have a role in SUI it should be after physiotherapy not instead of. None of the studies had documented courses of physiotherapy before laser treatment.	Thank you for your comment. Section 3.5 of the draft guidance states 'The committee noted that continuation of pelvic floor exercises is important in the management of stress urinary incontinence.'
12	Consultee 3 Fotona Company	**3.1**	Comment to point 3.1 of the Draft Guidance Since the initial Structured Information Request (SIR) that the Fotona Company provided to the National Institute for Health and Care Excellence's (NICE) interventional procedures programme, several new publications pertaining to the use of transvaginal laser therapy for stress urinary incontinence have been published. Two of those, Gambacciani et al.1 and Gaspar et al.2 have been mentioned in the first SIR (under Chapter 8).	Thank you for your comment. Section 3.1 of the draft guidance describes the evidence that was included in the rapid review. Ref.1 (Gambacciani et al., 2020) has been added to the summary of key evidence.

			Stress urinary incontinence (SUI) is defined as involuntary loss of urine due to a rise in intra-abdominal pressure in the absence of detrusor contraction. It is caused by a variety of conditions, with childbirth and aging being the main risk factors, which lead to a reduction in the strength of the pelvic floor muscles and damage to the connective tissue that support the bladder and the urethra3. As expected, age, parity, BMI and severity of SUI symptoms have been described as predictive factors for the efficacy of vaginal erbium laser treatment4,5. The influence of hysterectomy, as one of the most common gynaecological surgery, on the urinary incontinence symptoms, remains controversial, as does the influence of prior hysterectomy on the effectiveness of the vaginal laser treatment for SUI. The recently published results of a cohort non-inferiority study by Erel et al.6 addressed this question. They showed that the effects of vaginal laser treatment in hysterectomized patients are comparable to those in non-hysterectomized women. Furthermore, the effects have again been shown to be dose responsive, with higher number of treatment sessions associated with better improvement7. The duration of the beneficial effect of laser treatment was limited - around 18 months in non-hysterectomized women and 13 months in hysterectomized women. According to the authors, these findings should be considered in the process of patient counselling and evaluation of the need for further laser treatments6. Women are commonly advised to postpone surgical treatment for SUI until childbearing has been completed, because of the fear of SUI relapse or complications during pregnancy and delivery. This significantly narrows the SUI treatment portfolio for women in the child-bearing age. According to recent research by Kuszka et al.7, vaginal laser treatment could be recommended in	Ref. 2 (Gaspar et al., 2020) has been added to the appendix. Ref. 3 (Phillips et al., 2020) is included in the appendix of the overview. Ref. 4 (Fistonić et al., 2018) is included in the appendix of the overview) Ref. 5 (Erel et al., 2020) is included in table 2 of the overview. Ref. 6 (Erel et al., 2020) has been added to the appendix. Ref. 7 (Kuszka et al., 2020) is included in table 2 of the overview. Ref. 8 (Wang et al., 2021) has been added to the summary of key evidence. Ref. 9 is NICE guidance on Urinary incontinence and pelvic organ prolapse in women, which is referred to in the 'Indications and current treatment' section of the overview. Ref. 10 (Ford et al., 2015) is a review on mid-urethral sling operations, which is not within the remit of this guidance.

			younger premenopausal patients, as they could benefit more from the treatment. In addition, the results of the recently published study by Gaspar et al.2 show that laser treatment did not have any adverse effect on post-laser vaginal delivery. These newly published studies also offer valuable insights into a frequent question whether repeated laser procedures induce long-term tissue damage, such as fibrosis, showing, together with previously presented research, that there is no long-term damage2,7. Despite the availability of multiple treatment options for SUI, such as pelvic floor muscle training, behavioural therapies, and surgical procedures8, each therapy has its benefits and its limitations, and new treatment options are needed to expand the treatment portfolio to optimally meet the patients preferences and needs. Midurethral sling (MUS) procedures are still considered a gold standard for surgical management of SUI; however, their use have been limited to clinical trials or were even banned in some countries due to high frequency of severe adverse events following surgical procedures9,10. Failure rate of TOT/TVT procedures is reported to be up to 16 %, however there is no consensus on the treatment for the failed operations - sling procedures can be repeated (done in approx. 6 %) or other surgical approaches can be recommended for this specific situation. In a study conducted by Erel et al.11, patients who had a previous failed TVT/TOT operation, received vaginal erbium laser treatment and the effects in this patient population were compared with the effects of the laser treatment in patients with SUI, but no previous surgical intervention. The comparison of the two groups revealed that the SUI symptoms improved in both groups. The authors conclude that vaginal erbium laser treatment could be considered as an alternative	Ref. 11 (Erel et al., 2020) has been added to the appendix.

			treatment of SUI instead of re-operations11. The effects of laser treatment lasted about 16 months. Newly published papers since the submitted Structured Information Request are listed at the bottom of this document and marked in bold. References (newly published publications are marked in bold) **1. Gambacciani M, Cervigni M, Gaspar A, et al. Safety of vaginal erbium laser: A review of 113,000 patients treated in the past 8 years. Climacteric. 2020;23(sup1):S28-S32. doi:10.1080/13697137.2020.1813098 2. Gaspar A, Kolodchenko Y, Gaviria, J, Hreljac I, Vižintin Z. Does vaginal erbium laser affect subsequent vaginal deliveries? Eur Gynecol Obstet. 2020;2(3):193-196.** 3. Phillips C, Hillard T, Salvatore S, Toozs-Hobson P, Cardozo L. Lasers in gynaecology. Eur J Obstet Gynecol Reprod Biol. 2020;251:146-155. doi:10.1016/j.ejogrb.2020.03.034 4. Fistonić I, Fistonić N. Baseline ICIQ-UI score, body mass index, age, average birth weight, and perineometry duration as promising predictors of the short-term efficacy of Er:YAG laser treatment in stress urinary incontinent women: A prospective cohort study. Lasers Surg Med. 2018;50(6):636-643. doi:10.1002/lsm.22789 5. Erel CT, Inan D, Mut A. Predictive factors for the efficacy of Er:YAG laser treatment of urinary incontinence. Maturitas. 2020;132:1-6. doi:10.1016/j.maturitas.2019.11.003 **6. Erel CT, Fistonić I, Gambacciani M, Oner Y, Fistonić N. Er:YAG laser in hysterectomized women with stress urinary incontinence: a VELA retrospective cohort, non-inferiority study. Climacteric. 2020;23(sup1):S18-S23. doi:10.1080/13697137.2020.1814728** 7. Kuszka A, Gamper M, Walser C, Kociszewski J, Viereck V. Erbium:YAG laser treatment of female stress	

			urinary incontinence: midterm data. Int Urogynecol J. 2020;31(9):1859-1866. doi:10.1007/s00192-019-04148-9 **8. Wang Y, Wang C, Song F, Zhou Y, Wang Y. Safety and efficacy of vaginal laser therapy for stress urinary incontinence: a meta-analysis. Ann Palliat Med. 2021;10(2):25-25. doi:10.21037/apm-20-1440** 9. NICE Guidance - Urinary incontinence and pelvic organ prolapse in women: management. BJU Int. 2019;123(5):777-803. doi:10.1111/bju.14763 10. Ford AA, Rogerson L, Cody JD, Ogah J. Mid-urethral sling operations for stress urinary incontinence in women. Cochrane Database Syst Rev. 2015;2015(7). doi:10.1002/14651858.CD006375.pub3 **11. Erel CT, Fernandez LDC, Inan D, Makul M. Er:YAG laser treatment of urinary incontinence after failed TOT/TVT procedures. Eur J Obstet Gynecol Reprod Biol. 2020;252:399-403. doi:10.1016/j.ejogrb.2020.07.010**	
13	Consultee 3 Fotona Company	**3.3**	Comment to the point 3.3 of the Draft Guidance Neither in clinical studies, nor in clinical practice was there any reports of the erbium vaginal laser to cause scarring or formation of fistulas. The absence of long-term adverse effects reported by previous clinical studies can also be corroborated by the large safety survey, conducted by Gambacciani et al.1. The safety of vaginal erbium laser procedures was evaluated in a cohort of more than 43.000 patients that have been treated with the vaginal erbium laser in the past eight years. There have been no serious adverse events reported by none of the 535 users/practitioners who participated in the study, while most of the adverse events had the frequency of appearance lower than 1%. The highest occurring adverse event reported was vaginal discharge that appeared in approx. 4 % of the patients. Most importantly, all adverse events were mild	Thank you for your comment. The key safety outcomes are those that considered by the committee to be the most important and include events that could potentially happen as well as those that have been reported.

			to moderate and of transient nature. The authors conclude that vaginal erbium laser treatment appears to be safe and carries a very low risk profile. And a recent meta-analysis of safety and efficacy of vaginal laser therapy for SUI published by Wang et al.8 describes this treatment modality as effective, safe and minimally invasive option for SUI, which is well tolerated by patients.	
14	Consultee 3 Fotona Company	**Overview**	The multicentre randomized sham-controlled trial The Efficacy and Safety of Fotona Smooth® Device for the Treatment of Stress Urinary Incontinence (ClinicalTrials.gov Identifier: NCT03098992) has been completed and the clinical trial report is expected within couple of months.	Thank you for your comment. Procedures with 'research only' recommendation may be reassessed when relevant new research is published.
15	Consultee 3 Fotona Company	**Overview**	an update of the ongoing RCT trials is listed below. Use of Non-ablative Vaginal Erbium YAG Laser for the Treatment of Stress Urinary Incontinence. (VELSUI); NCT04643353; This is a single center, investigator initiated study, sponsored by the UZ Leuven, Leuven, Belgium; comparing laser treatment to pelvic floor exercises (PFE). Women with symptomatic stress urinary incontinence who seek for a conservative treatment, with no history of previous incontinence-surgery will be randomised to either the laser-arm or the PFE-arm. There are 3 visits (with a maximum of 6 visits) where vaginal application of laser will be performed, with a 4-weeks interval. Each application lasts around 15 minutes. The vaginal laser procedure will be performed in an outpatient setting, not requiring any specific preparation, analgesia or anesthesia, by one of two experienced operators. The primary objective is to evaluate the effects of VEL treatment for the subjective cure or improvement of SUI. The secondary objectives are to measure objective outcomes, to register any adverse events, and to determine for how long the	Thank you for your comment. This trial has been added to the list of ongoing trials in the overview.

			effects of laser are sustained, with a maximum of two years.	

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