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Vulvodynia

Does One Measure Fit All? The Role of Experimentally Induced Pain Tests in the Assessment of Women with Provoked Vestibular Pain
Ahinoam Lev-Sagie, Nosaiba Rayan-Gharra, et al.
Int J Womens Health. 2024 Jul 1:16:1199-1210.doi: 10.2147/IJWH.S441863. eCollection 2024.
https://pubmed.ncbi.nlm.nih.gov/38974514/

Purpose: A diagnostic algorithm was recently suggested to address the underlying mechanisms of provoked-vestibulodynia (PVD). It delineates four subgroups (Hormonal-associated, Augmented-anterior, Hymenal-associated and Hypertonicity-associated), each manifesting a distinctive vulvar pain-hypersensitivity regarding location (circumferential vs posterior-only vestibulodynia) and pain characteristics. We aimed to explore the significance of various experimentally induced vulvar pain measures in the manifestation of pain hypersensitivity in each subgroup. **Results:** Compared to controls, augmented vulvar pain-hypersensitivity and hypertonicity were observed among patients ($p < 0.001$). ANOVA revealed no subgroup differences in dyspareunia severity. Nevertheless, some experimentally induced-pain measures were differently correlated with dyspareunia intensity in each subgroup, allowing discrimination of subgroups according to the unique findings of vulvar pain-hypersensitivity. The degree of pelvic floor muscle-hypertonicity mediated the association between vulvar pain-hypersensitivity and dyspareunia severity, emphasizing the key role of hypertonicity in distinguishing between subgroups. **Conclusion:** The findings offer more evidence of variations among PVD subtypes, demonstrating that insertional dyspareunia may originate from dissimilar alterations in the mucosal and muscular tissues. The results also emphasize the significance of utilizing a wide battery of tests to capture different experimentally induced-pain measures, revealing the unique patterns of vulvar pain-hypersensitivity in each subgroup.

Cytokine profiles and their roles in development of provoked vulvodynia
Duc Le, Triet Le, et al.
Reprod Immunol. 2024 Aug 3:165:104313. doi: 10.1016/j.jri.2024.104313.
https://pubmed.ncbi.nlm.nih.gov/39106543/

Provoked, localized, vulvodynia (PVD) is the main subtype of vulvodynia. Although the etiology of PVD is still a topic of debate, inflammation caused by cytokines responding to a dysregulated microbiome is one of the leading proposed theories. Therefore, the purpose of our study is to further explore the cytokine profiles in the study group with PVD using multiplex immunoassays based on electrochemiluminescence. We compared a panel of 26 distinct cytokines levels in the study group with PVD (n = 23) to the control group (n = 18) and cytokine concentrations were measured using MESO QuickPlex SQ 120 instrument with 5 different multiplex assays. Statistical analysis used the Mann-Whitney U test, two-sided p-values, and a significance level of $\alpha = 0.05$. Differences in cytokine concentrations are described as negligible, small, medium, or large based on Cliff's δ. Concentrations of three cytokines were significantly lower in the PVD group: a large difference in IP-10 ($p = 0.029$*) and medium differences in IL-1RA[4] ($p = 0.030$*) and IL-12 ($p = 0.034$*). One cytokine level was significantly higher in the PVD group: a medium difference for IL-6 ($p = 0.037$*). Due to the lack of consistency in elevation of inflammatory profiles, it is not enough to support persistent inflammation as the etiology behind PVD. However, these findings may indicate there is a possible immune response deficiency in some patients who have PVD. The resemblance of cytokine profile in our study to cytokine profile of people with chronic yeast infection further support this proposed mechanism behind PVD. Future studies involving history and testing for yeast infection are necessary to explore this possibility further.

Long-Term Effectiveness of Vestibulectomy for the Treatment of Vulvodynia: A Retrospective Cohort Study

Nele Coryn, Bart Vergauwe, et al.

J Low Genit Tract Dis. 2024 Jul 1;28(3):258-263. doi: 10.1097/LGT.0000000000000810. Epub 2024 Jun 12.

https://pubmed.ncbi.nlm.nih.gov/38864720/

Objective: To evaluate the effectiveness and complication rate of vestibulectomy for vulvodynia. **Results:** Complete data were available for 80 patients. There was a significant reduction in median pain scores of between 65% and 80% on all 6 evaluated vestibular points during Q-tip tests. The median follow-up was 21 months, ranging from 1 to 92 months (interquartile range [IQR]). Overall, 75% of patients needed no further treatment at the end of the follow-up period. In 22.6% (18/80), a limited wound dehiscence was noted. No other complications were reported nor were there any cases of worsening of the complaints. **Conclusion/discussion:** In this retrospective cohort study, a significant pain reduction occurred after vestibulectomy in patients who were not responding to conservative treatment. The complication rate of this surgical procedure is low. Vestibulectomy seems to be an effective technique for management of vulvodynia.

Surgical Treatment for Provoked Vulvodynia: A Systematic Review

Koray Görkem Saçıntı, Hosna Razeghian, Jacob Bornstein

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https://pubmed.ncbi.nlm.nih.gov/39105455/

Objective: Provoked vulvodynia (PV), characterized by vulvar pain upon touch or pressure, is the leading cause of pain during sexual intercourse. It causes a significant decline in overall quality of life, including sexual dysfunction and mental distress. Surgical interventions, such as perineoplasty and vestibulectomy, are considered a last resort for PV cases unresponsive to less invasive therapies. This systematic review evaluates the efficacy of surgery for PV and suggests areas for future research.

Results: Out of 1102 records retrieved, 29 met the eligibility criteria. Surgery was typically considered after failed conservative treatments. In 15 of the 29 studies defining surgical success as a significant reduction in dyspareunia, success rates ranged from 52% to 93%. Six studies using validated scales for pain assessment noted a significant reduction in vulvar pain following surgery ($p < .001$). Two studies reported enhancements in sexual function ranging from 57% to 87%, while 3 studies found 89%-97% of women regained the ability to engage in sexual intercourse after surgery. Patient satisfaction rates ranged from 79% to 93%. Bartholin cysts occurred in up to 9% of cases, the most common complication reported. **Conclusion:** Surgery seems to be an effective and safe PV treatment option with success rates ranging from 52% to 97%, depending on the variation of outcome measures. Randomized clinical trials with established outcome measures are needed to determine the best surgical approach with minimal operative risk and optimal long-term outcomes.

Inflammation-induced mast cell-derived nerve growth factor: a key player in chronic vulvar pain?
Yaseen Awad-Igbaria, Doron Edelman, et al.
Brain. 2024 Jul 13:awae228. doi: 10.1093/brain/awae228.
https://pubmed.ncbi.nlm.nih.gov/39001871/

Provoked vulvodynia (PV) is characterized by localized chronic vulvar pain. It is associated with a history of recurrent inflammation, mast cell (MC) accumulation, and neuronal sprouting in the vulva. However, the mechanism of how vulvar-inflammation promotes neuronal sprouting and gene-expression adaptation in the spinal cord, leading to hypersensitivity and painful sensations, is unknown. Here, we found that vulvar tissue from women with PV (n=8) is characterized by MC accumulation and neuronal sprouting compared to women without PV (n=4). In addition, we observed these changes in an animal study of PV. Thus, we found that repeated vulvar zymosan-inflammation challenges lead to long-lasting mechanical and thermal vulvar hypersensitivity, which was mediated by MC accumulation, neuronal sprouting, overexpression of the pain channels (TRPV1 and TRPA1) in vulvar neurons, as well as a long-term increase of gene expression related to neuroplasticity, neuroinflammation, and nerve growth factor (NGF) in the spinal cord/DRG(L6-S3). However, regulation of the NGF pathway by stabilization of MC activity with ketotifen fumarate (KF) during vulvar inflammation attenuated the local increase of NGF and histamine, as well as the elevated transcription of pro-inflammatory cytokines, and NGF pathway in the spinal cord. Additionally, KF treatment during inflammation modulates MC accumulation, neuronal hyperinnervation, and overexpression of the TRPV1 and TRPA1 channels in the vulvar neurons, consequently preventing the development of vulvar pain. A thorough examination of the NGF pathway during inflammation revealed that blocking NGF activity by using an NGF-non-peptide-inhibitor (Ro08-2750) regulates the upregulation of genes related to neuroplasticity, and NGF pathway in the spinal cord, as well as modulates neuronal sprouting and overexpression of the pain channels, resulting in a reduced level of vulvar hypersensitivity. On the other hand, stimulation of the NGF pathway in the vulvar promotes neuronal sprouting, overexpression of pain channels, and increase of gene expression related to neuroplasticity, neuroinflammation, and NGF in the spinal cord, resulting in long-lasting vulvar hypersensitivity. In conclusion, our findings suggest that vulvar allodynia induced by inflammation is mediated by MC accumulation, neuronal sprouting, and neuromodulation in the vulvar. Additionally, chronic vulvar pain may involve a long-term adaptation in gene expression in the spinal cord, which probably plays a critical role in central sensitization and pain maintenance. Strikingly, regulating the NGF pathway during the critical period of inflammation prevents vulvar pain development via modulating the neuronal changes in the vestibule and spinal cord, suggesting a fundamental role for the NGF pathway in PV development.

Mindfulness and Management of Low Desire and Vulvovaginal Pain
Lori A Brotto, Melanie Altas
Obstet Gynecol Clin North Am. 2024 Jun;51(2):273-284. doi: 10.1016/j.ogc.2024.02.002. Epub 2024 Mar 11.
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Mindfulness is defined as present-moment, nonjudgmental awareness. By reducing self-criticism, and depression, and increasing self-compassion, attention, and interoceptive awareness, mindfulness has been found across a variety of systematic reviews and meta-analyses to significantly improve sexual desire, sexual pain, and sex-related distress. It helps individuals connect with their bodies, fostering a deeper understanding of sensations and desires while reducing the focus on negative, judgmental, and catastrophic sex-related and pain-related thoughts. By teaching individuals to focus on bare sensations, mindfulness has also been found to significantly reduce vulvovaginal pain intensity with improvements retained a year later.

Navigating Conflicting Ideals of Masculinity: A Qualitative Study of the Experiences of Male Partners of Women with Vulvodynia
Linn Myrtveit-Stensrud, Sidsel L Schaller, et al.
J Sex Res. 2024 Jul 3:1-12. doi: 10.1080/00224499.2024.2371946.
https://pubmed.ncbi.nlm.nih.gov/38958664/

Vulvodynia, a long-term genital pain disorder with a high lifetime prevalence, profoundly impacts both the affected women and their partners. However, the experiences of these partners have been under-researched. Using Braun and Clarke's thematic analysis, this qualitative study explored the experiences of male partners of women with vulvodynia. In individual interviews with seven men (20-32 years), four themes were identified: "Trying to be a good and caring partner," "Fear of sexual and emotional rejection," "Feelings of insecurity and being misled," and "Keeping up the façade." Despite efforts to support their partners, the men often faced rejection, leading to insecurities about their attractiveness, the relationship's future, and their ability to conform to social expectations. They coped by concealing insecurities from their partners and overemphasizing traditional masculinity among peers. We discuss these results using sexual script theory, suggesting that gendered sexual scripts play a significant role in relationships with vulvodynia, with prevailing cultural assumptions regarding masculinity challenging men's ability to be simultaneously caring and sexual. As a result, the men found themselves negotiating two contrasting ideals associated with masculine behavior: those of good caregiver and assertive, virile sexual partner. Our research suggests that male partners of women with vulvodynia tend to be left alone to deal with the resulting ambivalence and distress. Supporting these men could benefit both parties in managing vulvodynia.

Chronic Pelvic Pain

Efficacy of in-office lysis of clitoral adhesions with excision of keratin pearls on clitoral pain and sexual function: a pre-post interventional study
Jill M Krapf, Isabella Kopits, et al.
J Sex Med. 2024 Apr 30;21(5):443-451. doi: 10.1093/jsxmed/qdae034.
https://pubmed.ncbi.nlm.nih.gov/38515327/

Background: Keratin pearls are foci of central keratinization within concentric layers of squamous cells that can form under the clitoral prepuce and cause pain (clitorodynia); in-office removal of keratin pearls may reduce clitoral pain and improve sexual function. **Aim:** This study aims to investigate clitoral pain and sexual function in women with partial clitoral phimosis and keratin pearls before and after in-office lysis of clitoral adhesions with keratin pearl excision (LCA-KPE). **Outcomes:** An 11-point pain visual analog scale was utilized to determine pre- and postprocedure clitoral discomfort and difficulty with orgasm. Female sexual dysfunction was measured with the Female Sexual Function Index (FSFI) and Female Sexual Distress Scale-Revised. **Results:** A total of 32 of 74 patients who met inclusion criteria completed postprocedure surveys (43% response rate). Mean clitoral pain for respondents was 6.91 at baseline and 2.50 after LCA-KPE ($P < .001$). Mean difficulty with orgasm was significantly decreased from 5.45 at baseline to 3.13 after LCA-KPE ($P < .001$). Participants had a mean FSFI total score of 17.68 after treatment compared with a mean total baseline FSFI of 12.12 ($P = .017$). The mean FSFI score for pain was 2.43 at follow-up compared with 1.37 at baseline ($P = .049$). There was no significant difference in the mean Female Sexual Distress Scale-Revised score before vs after the procedure ($P = .27$). Qualitative themes described the procedure as painful but worthwhile, with 77% of participants reporting the overall experience as positive. Recurrence rate overall was 28%, with a median of 2 repeat procedures. **Clinical implications:** Recognizing keratin pearls as a structural cause of clitoral pain and offering in-office treatment is an important tool in addressing clitorodynia and improving sexual function. **Strengths and limitations:** This is the largest study to date documenting the occurrence, identifying associated pain conditions, and evaluating procedural outcomes for clitoral keratin pearls. This study was limited by a relatively small sample size. **Conclusion:** In-office LCA-KPE significantly reduced clitoral discomfort and difficulty with orgasm.

A Hypothesis for Anatomical Pathways of Chronic Pelvic Pain of "Unknown Origin"

Peter Petros, John Papadimitriou, Jacob Bornstein

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https://pubmed.ncbi.nlm.nih.gov/38861950/

Background: Interstitial cystitis/bladder pain syndrome (IC/BPS) is a disabling bladder condition. ESSIC, the IC/BPS society defines two types of IC/BPS: with Hunner's lesion (HL) and without. Pathogenesis is stated as unknown, with no cure possible. Scheffler in 2021 reported cystoscopically validated cure of HL IC/BPS by repair of uterosacral ligaments (USLs) and in 2022, Goeschen reported non-HL IC/BPS cure in 198 women following USL repair. Both Scheffler and Goeschen hypothesized IC/BPS may be a phenotype of the Integral Theory's Posterior Fornix Syndrome "PFS" (chronic pelvic pain, OAB, and emptying dysfunctions) and therefore potentially curable. **Summary:** The hypothesis explores whether visceral plexuses (VPs), due to weakened USLs support, serve as a primary source of pelvic pain impulses, leading to development of an inflammatory condition - for example, IC/BPS, a chronic inflammatory condition, which shares similarities with vulvodynia and complex regional pain syndrome (CRPS). According to our hypothesis, such conditions involve axon reflexes. Stimuli such as gravity applied to unsupported nerve branches within the visceral pelvic plexus, trigger centrally propagating impulses, which then progress antidromally to influence innervated tissues through cytokine release and nociceptor stimulation, perpetuating inflammatory processes at the end organs, and pain perception. **Key messages:** The hypothesis raises the question, "are IC/BPS, vulvodynia, other pain sites, even nonbacterial "chronic prostatitis" in the male, different phenotypes of the chronic pelvic pain syndrome which includes PFS. If so, the hypothesis opens several new research directions and would predict inflammatory findings in tender end organ pain sites.

Assessment and Treatment of Vaginitis
Caroline M Mitchell
Obstet Gynecol. 2024 Jul 11. doi: 10.1097/AOG.0000000000005673.
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Vaginitis is the presenting symptom at millions of office visits each year in the United States. Although treatment of sporadic cases is often straightforward, recurrent cases present both diagnostic and treatment challenges. Molecular diagnostic tests are likely superior to in-office microscopy for most clinicians and most cases. In both recurrent bacterial vaginosis and recurrent vulvovaginal candidiasis, national treatment guidelines recommend an extended treatment duration with one of the first-line agents. In cases in which such treatment is not successful, vaginal boric acid is likely the cheapest and easiest alternative option. New antifungal medications offer additional but limited treatment options. Probiotics are not recommended for prevention of vulvovaginal candidiasis; however, vaginal products containing Lactobacillus crispatus may have promise for recurrent bacterial vaginosis. Trichomoniasis should be treated with a 1-week course of metronidazole; this is the only sexually transmitted infection for which treatment recommendations vary by sex. In cases in which patients do not respond to initial treatment, the diagnosis should be reconsidered, and other potential causes such as desquamative inflammatory vaginitis, genitourinary syndrome of menopause, or vulvodynia should be considered.

Investigating the overlapping presentation of irritable bowel syndrome and vulvodynia: a scoping review of the evidence and mechanisms
Sara Perelmuter, Anantha Soogoor, et al.
Sex Med Rev. 2024 Jul 31:qeae053. doi: 10.1093/sxmrev/qeae053.
https://pubmed.ncbi.nlm.nih.gov/39084679/

Introduction: Vulvodynia is a complex and multifactorial medical condition characterized by pain in the vulvar area without any identifiable cause. Vulvodynia is underdiagnosed, leading to increased risk of sexual dysfunction and reduced quality of life. Irritable bowel syndrome (IBS) is a gastrointestinal disorder predominantly affecting women. Vulvodynia and IBS frequently co-occur in women, with a 2- to 4-fold increased likelihood of IBS diagnosis in those with vulvodynia. These conditions may share underlying causes, highlighting the need for research to better understand their shared pathophysiology and develop effective therapeutics. **Objective:** The aim of this scoping review was to assess the evidence of simultaneous presentation of IBS and vulvodynia. **Results:** Of the 306 unique articles identified, 33 were included in the final analysis: 20 cross-sectional studies, 4 case-control studies, 2 case reports, 4 cohort studies, 2 quasi-experimental studies, and 1 randomized trial. Common themes included a high prevalence of overlapping vulvodynia and IBS with a significant diagnostic delay in vulvodynia, mast cell involvement and visceral hypersensitization as common pathophysiology, and the need for a multimodal treatment. **Conclusion:** Our review adds to the evidence that there is an association between vulvodynia and IBS. Despite this, research on the underlying molecular mechanisms of this association is scarce, and diagnostic delays persist for vulvodynia. Increasing awareness of the overlap of these conditions will improve screening for vulvodynia in the patient population with IBS, thereby improving the diagnostic delay, and understanding the pathophysiology will enable treatment strategies that address both conditions.

Lasers in Gynecology
Cheryl B Iglesia, Jennie Eunsook Choi, Yona Tadir
Obstet Gynecol. 2024 Aug 1;144(2):181-194. doi: 10.1097/AOG.0000000000005635. Epub 2024 Jun 6.
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The first published reports on the use of laser for cervical pathology date back to 1973. Technical advancements in flexible and rigid laser fibers revolutionized video laser laparoscopy in the 1990s. Fractionated lasers have been used to treat vulvovaginal symptoms associated with genitourinary syndrome of menopause, lichen sclerosus, and urinary incontinence. Review of available data suggests that fractionated lasers can improve both subjective and objective signs of vaginal atrophy and lichen sclerosus, but the evidence is weak because most of the trials are underpowered, are at risk for bias, and lack long-term follow-up. There is no strong evidence to support fractionated laser therapy for urinary incontinence or low-level laser therapy for chronic pelvic pain. Although short-term, single-arm trials suggest benefit of fractionated laser therapy for genitourinary syndrome of menopause, lichen sclerosus, and urinary incontinence, additional adequately powered, prospective, randomized, and longer-term comparative trials are needed before lasers can be recommended for these specific conditions. The purpose of this Clinical Expert Series is to review basic laser biophysics and the mechanism of action for modern fractionated lasers as relevant to the gynecologist. We also summarize safety and effectiveness data for lasers used for some of the most commonly studied gynecologic conditions: the vulvovaginal atrophy component of genitourinary syndrome of menopause, lichen sclerosus, and urinary incontinence.

Mathematical Approach to Synergistic Management of Bladder Pain Syndrome/Interstitial Cystitis and Vulvodynia: A Case Series Utilizing Principal Component Analysis, Cluster Analysis, and Combination Laser Therapy
Nobuo Okui, Machiko A. Okui
Published: July 31, 2024 DOI: 10.7759/cureus.65829 (July 31, 2024). Cureus 16(7): e65829. doi:10.7759/cureus.65829
https://www.cureus.com/articles/271671#!/

This case series presents three patients with bladder pain syndrome/interstitial cystitis (BPS/IC) and vulvodynia, demonstrating the efficacy of an individualized treatment approach using cluster analysis and combination laser therapy. Principal component analysis (PCA) was used to visualize the dynamic nature of symptom clusters and guide treatment decisions. Case 1 was a 41-year-old woman initially classified as Cluster 1 (PCA coordinates: 1.65, 0.03) transitioned to Cluster 2 (-16.93, -21.75) after bladder hydrodistension. Subsequent Fotona laser (Ljubljana, Slovenia) treatment resulted in the complete resolution of symptoms. Case 2 was a 55-year-old woman, contraindicated for hormone therapy due to breast cancer history, presented as Cluster 2 (PCA coordinates: -24.16, 8.74). Fotona laser treatment shifted her to Cluster 1 (11.22, -20.22), followed by bladder hydrodistension for complete cure. Case 3 was a 49-year-old woman, initially in Cluster 0 (PCA coordinates: 1.892, 30.11), who underwent fulguration for Hunner's lesions. Posttreatment, she moved to Cluster 2 (-24.31, 1.767) and achieved full recovery after Fotona laser therapy. The dynamic nature of symptom clusters, visualized through PCA, guided treatment decisions. The PCA transformation, represented as $y = W^T z$, where z is the standardized symptom vector and W is the principal component matrix, allows for the objective tracking of symptom changes. Combination Fotona laser therapy, including vaginal erbium YAG and neodymium YAG, has proven effective in managing vulvar pain, particularly when hormone therapy is contraindicated. This approach, addressing both urological and gynecological aspects,

resulted in sustained symptom improvement for over 12 months in all cases. This case series highlights the synergistic relationship between BPS/IC and vulvodynia, demonstrating the efficacy of comprehensive, adaptive treatment strategies guided by mathematical analysis for complex pelvic pain syndromes.

Genitourinary Syndrome of Menopause/Vulvovaginal Atrophy

Multifaceted Impact of CO_2 Laser Therapy on Genitourinary Syndrome of Menopause, Vulvovaginal Atrophy and Sexual Function
Svetlana Jankovic, Marija Rovcanin, et al.
Healthcare (Basel). 2024 Jul 11;12(14):1385. doi: 10.3390/healthcare12141385.
https://pubmed.ncbi.nlm.nih.gov/39057528/

Genitourinary syndrome of menopause (GSM) encompasses a range of distressing symptoms in the vulvovaginal and/or bladder-urethral regions related to menopause changes, negatively influencing woman's quality of life and sexual activity. Fractional micro-ablative CO_2 laser therapy has shown the potential to reinstate the vaginal epithelium to a condition akin to the premenopausal state, thereby ameliorating the subjective symptoms associated with GSM. We conducted a prospective, pilot study in 73 sexually active postmenopausal women treated with CO_2 laser for their GSM symptoms, while assessing Vaginal Health Index Score (VHIS) and sexual function through the Female Sexual Function Index (FSFI) Questionnaire. The laser treatment resulted in a decrease in VHIS and patient-reported vulvovaginal atrophy (VVA) symptoms, with a significantly lower prevalence of vaginal itching, dryness, and burning ($p < 0.001$), as well as dyspareunia ($p = 0.002$). The occurrence of urinary incontinence, urgency, and vaginal heaviness significantly reduced, with an improvement in the staging of cystocele, either to Stage 1 or complete resolution ($p < 0.001$). FSFI total and domain scores were significantly higher after the treatment, indicating better sexual function, with a post-treatment score median of 25 ($p < 0.001$). Therefore, using a three-cycle fractional CO_2 laser was an effective choice for reducing urogenital discomfort related to GSM in postmenopausal women.

Understanding the Benefits of CO_2 Laser Treatment for Vulvovaginal Atrophy
Svetlana Jankovic, Marija Rovcanin, et al.
Medicina (Kaunas). 2024 Jun 27;60(7):1059. doi: 10.3390/medicina60071059.
https://pubmed.ncbi.nlm.nih.gov/39064488/

Background and Objectives: Postmenopausal vaginal discomfort is often attributed to vulvovaginal atrophy (VVA). Women with VVA experience symptoms such as vaginal dryness, itching, burning, irritation, and dyspareunia. **Materials and Methods:** This pilot study was conducted to assess the effects of a micro-ablative fractional CO_2 laser on the clinical symptoms of VVA, as well as concordant sexual function. The severity of VVA symptoms was evaluated by a visual analogue scale (VAS), while the condition of the vaginal mucosa was evaluated using the Vaginal Health Index Score (VHSI). Sexual function was evaluated using the Female Sexual Function Index (FSFI) Questionnaire. **Results:** Our cohort included 84 sexually active postmenopausal women with bothersome VVA, leading to sexual health complaints. The mean age of the participants in our study was 55.2 ± 5.4 years, with an average postmenopausal period of 6 ± 4.8 years. The age of our patients and the length of their postmenopausal period exhibited a significant negative correlation with VHSI scores, while a longer postmenopausal

period was associated with increased severity of vaginal dryness and dyspareunia. Baseline VHSI values showed that 65% of patients had atrophic vaginitis with pronounced VVA symptoms (70.2% experienced vaginal itching, 73.8% reported vaginal burning, 95.3% had vaginal dryness, and 86.1% suffered from dyspareunia). Lower VHSI values significantly correlated with lower FSFI scores, while more severe VVA symptoms scores correlated with lower FSFI scores. VVA symptoms were significantly less severe after treatment. VHIS regained high non-atrophic values in 98.8% of patients post-treatment ($p < 0.001$). FSFI total and domain scores were significantly higher after treatment ($p < 0.001$). **Conclusions:** Our study revealed that fractional CO_2 laser is a useful treatment option to alleviate VVA symptoms and improve vaginal health and sexual functioning in postmenopausal women.

A review of the role for pelvic floor physiotherapy in postmenopausal women with urinary incontinence
Lauren A Walgren, Corinne Wade, et al.
Post Reprod Health. 2024 Aug 11:20533691241272830. doi: 10.1177/20533691241272830.
https://pubmed.ncbi.nlm.nih.gov/39129175/

Urinary incontinence is a prevalent condition affecting women. Pelvic floor physiotherapy is a specialized field of physiotherapy dedicated to assessing and treating pelvic floor muscles. This therapy has demonstrated benefits in addressing stress urinary incontinence in premenopausal women, with numerous studies supporting its efficacy in this population. However, pelvic floor physiotherapy in the treatment of postmenopausal women is less well-established, and furthermore, the types of urinary incontinence in postmenopausal women are much broader. We provide a comprehensive review of recent literature investigating the effectiveness of pelvic floor physiotherapy therapy for various conditions in postmenopausal women, including urinary incontinence, urgency urinary incontinence, pelvic organ prolapse, genitourinary syndrome of menopause, sexual dysfunction, and urinary incontinence in the context of obesity, frailty, mobility, and dementia. After evaluating the current literature, it is evident that there is insufficient data to definitively endorse or dismiss the utilization of Pelvic floor physiotherapy for treating urinary incontinence in postmenopausal women. Nevertheless, considering the low associated risks of pelvic floor physiotherapy, we advocate for the initiation of comprehensive, large-scale randomized studies aimed at evaluating its effectiveness in addressing urinary incontinence in postmenopausal women with special attention to vulnerable subgroups, including individuals who are obese, frail or experiencing cognitive impairment.

Ospemifene and vulvovaginal atrophy: an update of the clinical profile for post-menopausal women
Costantino Di Carlo, Angelo Cagnacci, et al.
Expert Opin Pharmacother. 2024 Aug 13:1-14. doi: 10.1080/14656566.2024.2391009.
https://pubmed.ncbi.nlm.nih.gov/39129457/

Introduction: The demand for effective and safe treatments of genitourinary syndrome (GSM) in post-menopausal women (PMW) is growing. Published data on the efficacy and safety of ospemifene (OSP) prompt an updated literature review to enlighten possible improvements in the GSM treatment. **Area covered:** We searched articles published in English from 2010 to 2023 through Medline (PubMed) and Embase databases with Boolean terms: OSP, PMW, GSM, endometrium, breast cancer, cardiometabolic syndrome, bone metabolism, adherence to treatment, and patient satisfaction. We selected randomized controlled trials (RCTs) and observational and cross-sectional studies and completed the search manually. **Expert opinion:** Of the 157 retrieved records, 25 primary studies met

the inclusion criteria (15 regarding efficacy and safety, two for additional effects, and four for adherence and satisfaction with the OSP treatment). Seven RCTs involved nearly 5,000 patients, 10 out of 18 prospective observational studies 563, and six retrospective analyses 356,439. Evidence of OSP treatment in PMW with GSM relies on RCTs and remarkable real-world data. The 25 primary studies showcased the high clinical response to symptoms, the favorable safety profile of OSP with very few adverse events, a neutral impact on the endometrium, breast, bone, and thrombosis, and the possible improvement of cardiovascular risk factors.

Ospemifene for Genitourinary Syndrome of Menopause: Patient Selection
Giulia Marchetti, Annika Taithongchai, Dudley Robinson
Int J Womens Health. 2024 Jun 5:16:1049-1053. doi: 10.2147/IJWH.S431520. eCollection 2024.
https://pubmed.ncbi.nlm.nih.gov/38855356/

Vulvar vaginal atrophy is a common condition affecting postmenopausal women, significantly impacting their quality of life. Fortunately, various treatment options are available, ranging from hormonal to non-hormonal therapies. Ospemifene has emerged as a promising non-hormonal alternative for managing vulvar vaginal atrophy. Its targeted approach, unique mechanism of action, favorable safety profile particularly for breast tissue, and efficacy make it a valuable option for women seeking relief from symptoms such as vaginal pain, dryness and dyspareunia and cannot receive estrogen supplementations. This is particularly the case for breast cancer survivors or women with a significant family history of estrogen-dependent cancers. Hence, tailored treatment plans, considering individual preferences and health circumstances, are essential in optimizing outcomes and improving the overall well-being of affected individuals.

Persistent Genital Arousal Disorder

Pudendal nerve blockade for persistent genital arousal disorder (PGAD): A clinical review and case report
Michael J Gyorfi, Alaa Abd-Elsayed
Pain Pract. 2024 Jul;24(6):852-855. doi: 10.1111/papr.13362. Epub 2024 Mar 10.
https://pubmed.ncbi.nlm.nih.gov/38462787/

Background: Persistent genital arousal disorder (PGAD) is a condition characterized by unwanted and potentially painful genital sensations or spontaneous orgasms without stimulation. We present a case of a 55-year-old woman with refractory genital arousal disorder that was treated with serial pudendal nerve blocks. **Case:** RW is a 55-year-old woman with chronic pelvic pain, pudendal neuralgia, MDD, SI, GAD, CRPS, and persistent genital arousal disorder for 11 years. Her PGAD was refractory to conservative management, physical therapy, and bilateral clitoral artery embolization. We performed bilateral pudendal nerve blocks with Kenalog and Bupivacaine, which provided almost complete relief for 2-3 months. We performed a bilateral pudendal nerve radiofrequency ablation; however, there was minimal benefit. RW continues to have significant relief with serial pudendal nerve blocks. **Summary and conclusion:** Persistent genital arousal disorder is often refractory to medication and physical therapy requiring significant intervention such as entrapment surgery or artery embolization. Our case demonstrates pudendal nerve blocks as a potential treatment modality with minimal side effects.

Pudendal Neuralgia

The pudendal syndrome: A photo essay of nerve compression damage visualized at neurolysis in patients with chronic neuropathic pelvic pain
Stanley J Antolak Jr
Neurourol Urodyn. 2024 Jul 20. doi: 10.1002/nau.25555.
https://pubmed.ncbi.nlm.nih.gov/39032061/\

Aims: (1) To use intraoperative photographs to visualize and explain pudendal nerve compressions and anatomical variations of compression sites in patients with chronic pelvic pain. (2) To emphasize the diagnostic importance of sensory examination with a safety pin at the six pudendal nerve branches in all patients with chronic pelvic pain; the dorsal nerves (penis or clitoris; the perineal nerves; and the inferior rectal nerves). **Results:** The transgluteal incision permits access to pudendal anatomy and compression sites from the subpiriformis area through the interligamentary space and the pudendal canal (Alcock canal). Compressions were acquired or congenital and severity varied significantly. Pinprick sensory testing diagnoses pudendal neuropathy in 92% of both genders. Mid-nerve compression occurred commonly between the sacrotuberous and sacrospinous ligaments less frequently in the Alcock canal, but also at aberrant pathways, for example, between layers of the sacrotuberous ligament; a separate inferior rectal nerve passing through the sacrospinous ligament; at an anomalous lateral pathway posterior to the ischial spine. The results of international surgeons are discussed. **Conclusions:** Decompression surgery was recommended in approximately 35% of patients in this practice, when pudendal neuropathy (pudendal syndrome), did not respond to two conservative levels of treatment: (1) nerve protection and medications and, (2) a series of three pudendal nerve perineural injections given at 4-week intervals. Significant nerve compression is consistently observed. Pathophysiology includes axonopathy from ischemia and demyelination. Neuropathy is readily diagnosed using a pinprick sensory examination of six pudendal nerve branches. Monitoring with the National Institutes of Health Chronic Prostatitis Symptom Index records cures >13 years.

Surgical approaches for pudendal nerve entrapment: insights from a systematic review and meta-analysis
Toon Mylle, René De Corte, et al.
Surg Endosc. 2024 Aug;38(8):4160-4170. doi: 10.1007/s00464-024-10990-w. Epub 2024 Jun 28.
https://pubmed.ncbi.nlm.nih.gov/38942945/

Background: Pudendal nerve entrapment (PNE) is an underdiagnosed condition affecting a spectrum of pelvic functions, primarily pain, as outlined by Nantes diagnostic criteria. Although numerous surgical decompression techniques are available for its management, consensus on efficacy and safety is lacking. This study conducts a systematic review and meta-analysis to assess the efficacy and complication rates of the main surgical decompression techniques. **Results:** Nineteen studies, comprising 810 patients, were included. The overall significant pain relief rate across all techniques was estimated at 0.67 (95% CI 0.54 to 0.78) with considerable heterogeneity (I^2 = 80.4%). Subgroup analysis revealed success rate for different techniques: laparoscopic (0.91, 95% CI 0.64 to 0.98), perineal (0.69, 95% CI 0.52 to 0.82), and transgluteal (0.50, 95% CI 0.37 to 0.63). The laparoscopic technique exhibited a complication rate of 16.0%. Meta-regression indicated that patient age and median follow-up significantly influenced outcomes. **Conclusion:** While comparing surgical techniques is challenging, this meta-analysis highlights important outcome differences. The laparoscopic technique appears most promising for pain

improvement. However, the study also emphasizes the need for further robust, long-term research due to significant heterogeneity across studies and prevelent risk of bias.

Pudendal nerve neurolysis outcomes for urogenital and rectal disorders in patients suffering from pudendal nerve entrapment: A systematic review
Carlo Giulioni, Lucia Pitoni,et al.
Investig Clin Urol. 2024 May;65(3):230-239. doi: 10.4111/icu.20230402.
https://pubmed.ncbi.nlm.nih.gov/38714513/

Purpose: Pudendal neuropathy is an uncommon condition that exhibits several symptoms depending on the site of nerve entrapment. This study aims to evaluate the efficacy of pudendal nerve neurolysis (PNN) in improving lower urinary tract symptoms, anal and/or urinary incontinence, and sexual dysfunctions. **Results:** Twenty-one papers were accepted, revealing significant findings in the field. The study identified four primary sites of pudendal nerve entrapment (PNE), with the most prevalent location likely being at the level of the Alcock canal. Voiding symptoms are commonly exhibited in patients with PNE. PNN improved both urgency and voiding symptoms, and urinary and anal incontinence but is less effective in cases of long-standing entrapment. Regarding sexual function, the recovery of the somatic afferent pathway results in an improvement in erectile function early after neurolysis. Complete relief of persistent genital arousal disorder occurs in women, although bilateral PNN is necessary to achieve the efficacy. PNN is associated with low-grade complications. **Conclusions:** PNN emerges as a viable option for addressing urinary symptoms, fecal incontinence, erectile dysfunction, and female sexual arousal in patients suffering from PNE with minimal postoperative morbidity.

Endovascular stimulation of the pudendal nerve using a stent-mounted electrode array
JingYang Liu, David B Grayden, et al.
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https://pubmed.ncbi.nlm.nih.gov/39029495/

Previous preclinical and clinical studies have demonstrated that pudendal nerve is a promising target for restoring bladder control. The spatial proximity between the pudendal nerve and its accompanying blood vessels in the pudendal canal provides an opportunity for endovascular neurostimulation, which is a less invasive approach compared to conventional chronically implanted electrodes. In this study, we investigated the feasibility of excitative stimulation and kilohertz-frequency block of the compound pudendal nerve in sheep using a stent-mounted electrode array.
Approach: In a set of acute animal experiments, a commercially available hexapolar electrode catheter was introduced in the unilateral internal pudendal artery to deliver bipolar electrical stimulation of the adjacent compound pudendal nerve. The catheter electrode was replaced with a custom-made stent-mounted electrode array and the stimulation sessions were repeated. Global electromyogram (EMG) activity of the external urethral sphincter was recorded concurrently.
Main results: We demonstrated the feasibility of endovascular stimulation of the pudendal nerve efferents with both electrode types. The threshold current of endovascular stimulation was influenced by electrode-nerve distance and electrode orientation. Increasing the axial inter-electrode distance significantly decreased threshold current. Endovascular kilohertz-frequency nerve block was possible with the electrode catheter.
Significance: The present study demonstrated that endovascular stimulation of the pudendal nerve with the stent-mounted electrode array may be a promising less invasive alternative to

conventional implantable electrodes, which has important clinical implications in the treatment of urinary incontinence. Endovascular blocking of pudendal nerve efferents may provide an alternative solution to the bladder-sphincter dyssynergia problem in bladder management for people with spinal cord injury.

Lumbosacral plexus and pudendal nerve magnetic resonance tractography: A systematic review of the clinical applications for pudendal neuralgia
M Duraffourg, G Rougereau, et al.
Magn Reson Imaging. 2024 Oct:112:18-26. doi: 10.1016/j.mri.2024.05.013. Epub 2024 May 24.
https://pubmed.ncbi.nlm.nih.gov/38797289/

Diffusion tensor imaging (DTI) is commonly used to establish three-dimensional mapping of white-matter bundles in the supraspinal central nervous system. DTI has also been the subject of many studies on cranial and peripheral nerves. This non-invasive imaging technique enables virtual dissection of nerves in vivo and provides specific measurements of microstructural integrity. Adverse effects on the lumbosacral plexus may be traumatic, compressive, tumoral, or malformative and thus require dedicated treatment. DTI could lead to new perspectives in pudendal neuralgia diagnosis and management. We performed a systematic review of all articles or posters reporting results and protocols for lumbosacral plexus mapping using the DTI technique between January 2011 and December 2023. Twenty-nine articles published were included. Ten studies with a total of 351 participants were able to track the lumbosacral plexus in a physiological context and 19 studies with a total of 402 subjects tracked lumbosacral plexus in a pathological context. Tractography was performed on a 1.5T or 3T MRI system. DTI applied to the lumbosacral plexus and pudendal nerve is feasible but no microstructural normative value has been proposed for the pudendal nerve. The most frequently tracking parameters used in our review are: 3T MRI, b-value of 800 s/mm^2, 33 directions, 3 × 3 × 3 mm^3, AF threshold of 0.1, minimum fiber length of 10 mm, bending angle of 30°, and 3DT2 TSE anatomical resolution. Increased use of DTI could lead to new perspectives in the management of pudendal neuralgia due to entrapment syndrome, whether at the diagnostic, prognostic, or preoperative planning level. Prospective studies of healthy subjects and patients with the optimal acquisition parameters described above are needed to establish the accuracy of MR tractography for diagnosing pudendal neuralgia and other intrapelvic nerve entrapments.

Dermatological Conditions

Low-level laser therapy: an efficient supplement to treatments of vulvar Lichen sclerosus to improve quality of life
Pia Kirstine Berthelsen, Sidsel Eb Ipsen, Mohammed R Khalil
J Obstet Gynaecol. 2024 Dec;44(1):2349965. doi: 10.1080/01443615.2024.2349965. Epub 2024 May 10.
https://pubmed.ncbi.nlm.nih.gov/38727718/

Background: Lichen sclerosus (LS) is a chronic, inflammatory disease of the genital and extra genital skin, causing pruritus, soreness, pain and dyspareunia. The aim of this study was to investigate whether Low Level Laser Therapy (LLLT) can improve the quality of life in women with Lichen sclerosus (LS) and insufficient topical treatment. **Results:** A total of 94 patients completed the study, median age of 62 [InterQuartile Range 53-69]. There was a statistically significant improvement in seven of the eight

domains of the HRQoL test after ten LLLT. We found the results of DoloTest to be statistically significant in all of the groups except for smoking ($p < 0.094$). **Conclusions:** LLLT treatment can improve the quality of life in women with LS.

Barriers to identifying, diagnosing, and treating vulval lichen sclerosus in primary care: a mixed methods survey study
Louise Clarke, Rosalind Simpson, et al.
Br J Gen Pract. 2024 Jun 20;74(suppl 1):bjgp24X737961. doi: 10.3399/bjgp24X737961.
https://pubmed.ncbi.nlm.nih.gov/38902073/

Background: Vulval lichen sclerosus (VLS) is a skin condition which causes pain, itching, anatomical changes, and increases vulval cancer risk by up to 22 times. VLS is treatable, with use of topical steroids allowing symptom resolution and complication prevention. Diagnostic delay and misdiagnosis of VLS is common. Previous studies found that women attribute this to poor interactions with and knowledge of clinicians. Most VLS is diagnosed in primary care. **Aim:** To investigate primary care clinicians' views on confidence in identifying and managing vulval skin disease and VLS, barriers to diagnosis, education on vulval skin disease, and diagnostic criteria for VLS. **Results:** There were 122 responses, the majority from GP trainees (48%) and GPs (43%). Confidence in diagnosing, identifying, and treating VLS positively correlated with female gender, time in role, and examination frequency. Themes identified include patients not knowing normal, male clinicians: deskilling and reluctance, lack of clinician knowledge, and uncertainty around diagnosis and treatment. 38% of participants never participated in teaching or learning on vulval skin disease. Almost all (98%) participants feel diagnostic criteria would be helpful. **Conclusion:** This study illuminates the multiple barriers to diagnosis and treatment of VLS. The results confirm that clinicians share patient concerns that knowledge is poor, highlight the importance of developing clear diagnostic criteria, and will allow us to target training to those lacking in confidence.

Anterior obturator artery perforator (aOAP) flap: A last-resort treatment option for sexual dysfunction in lichen sclerosus et atrophicus
D M O'Dey, M Rosendahl, et al.
J Plast Reconstr Aesthet Surg. 2024 Aug:95:331-339. doi: 10.1016/j.bjps.2024.05.046. Epub 2024 Jun 3.
https://pubmed.ncbi.nlm.nih.gov/38955111/

Introduction: Lichen sclerosus et atrophicus is an inflammatory, scarring dermatosis of the female anogenital area and may lead to pain and sexual dysfunction. In select cases which are refractory to conservative therapy, surgery may provide significant symptom improvement. The objective of this study was to expand the range of surgical treatment options for these patients by presenting the operative outcomes of a specialised reconstructive method using the anterior obturator artery perforator (aOAP) flap. **Results:** Between 2014 and 2022, a total of 61 patients were surgically treated and retrospectively included in this study. Vulvectomy and subsequent reconstruction with bilateral aOAP flaps were performed in 53 (87%) cases. There was a significant reduction in the prevalence of dyspareunia and inability to have sexual intercourse at the 1-year follow-up compared to baseline ($p < 0.001$). There were several minor, reversible complications that required secondary intervention. **Conclusions:** The outcomes of this study indicate a substantial improvement in sexual function, evidenced by a significant reduction in dyspareunia and an increased ability to engage in sexual intercourse. Altered tissue quality in patients with lichen sclerosus et atrophicus and long-term

cortisone application may predispose this patient population to a higher risk of minor post-operative complications.

IL-17: a novel player in the pathogenesis of vulvar lichen sclerosus
Wojciech Baran, Zdzisław Woźniak, Aleksandra Batycka-Baran
Postepy Dermatol Alergol. 2024 Apr;41(2):220-225. doi: 10.5114/ada.2024.139142. Epub 2024 Apr 24.
https://pubmed.ncbi.nlm.nih.gov/38784924/

Introduction: Vulvar lichen sclerosus (VLS) is a chronic progressive, lymphocyte-mediated inflammatory disease whose pathogenesis is complex and not fully elucidated. **Aim:** In the current study we have investigated for the first time the expression of interleukin-17 (IL-17) and S100A7 in lesional skin obtained from female individuals with histologically confirmed VLS. **Results:** The number of cells showing IL-17 expression was significantly higher in VLS lesional skin as compared to normal skin of healthy controls ($p < 0.0001$). In VLS lesional skin, IL-17 was expressed in the epidermis and by cells within the inflammatory infiltrate in the upper dermis. The number of cells showing S100A7 expression was significantly higher in VLS lesional skin as compared to normal skin of healthy controls ($p < 0.0001$). In VLS lesional skin, S100A7 was expressed by suprabasal keratinocytes in epidermis. S100A7 was also expressed by cells within the inflammatory infiltrate in the dermis. **Conclusions:** The results of our study may suggest the involvement of IL-17 and S100A7 in the pathogenesis of VLS. The better understanding of this disease may lead to the development of novel, effective therapeutic strategies e.g. using well-known biologics IL-17 inhibitors class.

Lichen Sclerosus: A Survey of Diagnosis and Management Among Pediatric Dermatologists and Gynecologists
Christine M Pennesi, Aneka Khilnani, et al.
J Drugs Dermatol. 2024 Jun 1;23(6):450-455. doi: 10.36849/JDD.8084.
https://pubmed.ncbi.nlm.nih.gov/38834221/

Background/objectives: Lichen sclerosus (LS) is a chronic condition that warrants close follow-up due to the risk of scarring. The optimal long-term management of pediatric vulvar and perianal lichen sclerosus (PVPLS) is unknown. This study aimed to identify diagnostic, treatment, and maintenance regimens among pediatric dermatologists and pediatric/adolescent gynecologists, as well as assess provider confidence and desire for guidance on long-term PVPLS management. **Results:** Most responders were attending-level pediatric/adolescent gynecologists (46%) and pediatric dermatologists (41%). Although 85% of participants felt completely or very confident in diagnosing PVPLS, the majority (86%) desired further management guidelines. While the initial treatment was similar among providers, maintenance regimens and follow-up varied considerably, with only 42% recommending lifelong monitoring despite potential persistence into adulthood. **Conclusions:** While initial treatment was similar among practitioners, there was variation by specialty in subsequent management and a lack of uniformity in long-term follow-up. Additional studies are needed to clarify the optimal management of PVPLS and to provide evidence-based guidelines regarding long-term follow-up.

Treatment-induced anogenital melanosis is a very frequent finding in patients with vulvar lichen sclerosus

Thilo Gambichler, Gülgün Erdogan, et al.

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https://pubmed.ncbi.nlm.nih.gov/39015748/

Background: Pigmented lesions such as melanosis have rarely been reported in patients with vulvar lichen sclerosus (VLS) that is typically characterized by hypopigmented lesions. **Objective:** We aimed to analyze systematically anogenital melanosis in a large cohort of VLS patients. **Results:** According to the clinical score, 79 (198/39.9%) patients showed grade 1 disease, 78 (198/39.4%) grade 2, 37 (198/18.7%) grade 3, and 4 (198/2%) grade 4 disease. About 111 (56.1%) of the 198 patients had anogenital melanosis with a median modified Melasma Area and Severity Index of 3.6 (0.4-14). Univariate analysis revealed that anogenital melanosis was positively correlated with the use of topical estrogens (*P* = .0018) and negatively correlated with the use of pulsed high-dose corticosteroids plus low-dose methotrexate (PHDC-LDM, *P* = .021). On multivariable analysis, the use of topical hormone therapy turned out to be a strong independent predictor for the presence of anogenital melanosis (odds ratio: 4.57, 95% confidence interval: 1.66-12.57, *P* = .0033), whereas PHDC-LDM use was an independent predictor for the absence of anogenital melanosis (odds ratio: 0.35, 95% confidence interval: 0.15-0.84, *P* = .018). **Limitations:** The study includes the retrospective monocentric design.
Conclusion: Anogenital melanosis is a very frequent and so far, under-reported clinical finding in VLS patients. It is likely caused by the use of topical estrogens employed for VLS treatment. In contrast, patients with more severe disease and PHDC-LDM treatment appear to develop less likely anogenital melanosis.

Vulvar lichen sclerosus in girls and adult females: A single-center retrospective study of 744 patients in China

Lin Liu, Yuexi He, et al.

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https://pubmed.ncbi.nlm.nih.gov/38940217/

Vulvar lichen sclerosus (VLS) is a chronic, inflammatory disease which is accompanied by itching and pain, affecting the patient's daily life and sexual activity. However, the disease characteristics of children and adults are not completely the same. Currently, there are few studies in China that compare the characteristics of VLS between girls and adult female patients. The aim of this study was to compare the epidemiology, clinical features, and combined autoimmune diseases of VLS patients between girls and adult females, and to help clinicians better understand VLS in different age groups. We enrolled 744 female patients for analysis, divided by age into a child group (<18 years) and an adult group (≥18 years). Among girl patients, 94.6% had preadolescent onset, while among adult female patients, only 4.6% had preadolescent onset, which was a statistically significant difference. The highest percentage of adult female patients had onset during their child-bearing period (75.4%), while 20% had postmenopausal onset, with a significant difference when the three onset states were compared. White patches were equally common in both girl and adult female patients' external genital area, while mossy lesions and labia minora atrophy were more common in adult female patients. Involvement of the clitoris, labia minora, and vaginal opening area were more common in adult patients. The perianal area was more commonly involved in girl patients. We found eight cases (1.2%) of secondary squamous cell carcinoma in adult female patients. We also found that 13 patients had concurrent lichen sclerosus lesions on the

vulva and extragenital region, including two girls and 11 adult females. Extragenital lichen sclerosus (EGLS) occurred mostly in the torso. Clinicians should be aware of these differences so that early diagnosis and treatment of the disease can be achieved, to avoid irreversible anatomical alterations and the risk of cancer.

Lichen Sclerosus-Incidence and Comorbidity: A Nationwide Swedish Register Study
Sandra Jerkovic Gulin, Filippa Lundin, et al.
J Clin Med. 2024 May 8;13(10):2761. doi: 10.3390/jcm13102761.
https://pubmed.ncbi.nlm.nih.gov/38792303/

Background: Data on the incidence and comorbidity of Lichen sclerosus (LS), based on validated nationwide population-based registries, remains scarce. **Objective**: To explore the incidence and association of comorbidities with LS in Sweden, emphasizing its potential links to malignancies and autoimmune disorders. **Results**: The incidence of LS in Sweden was 80.9 per 100,000 person per year, with higher incidence in females (114.4) than in males (47.2). LS patients showed an increased odds ratio for vulvar cancer (OR = 8.3; 95% CI = 7.5-9.0), penile cancer (OR = 8.9; 95% CI = 7.3-11.0), prostate cancer (OR = 1.2; 95% CI = 1.1-1.2), testicular cancer (OR = 1.4; 95% CI = 1.1-1.7), bladder cancer (OR = 1.1; 95% CI = 1.1-1.2), breast cancer (OR = 1.4; 95% CI = 1.3-1.4), leukoplakia of the vulva (OR = 253.5; 95% CI = 221.9-289.6), and leukoplakia of the penis (OR = 5.1; 95% CI = 4.9-5.4). **Conclusions**: This study underscores the significantly increased association of various cancers and premalignant conditions in LS patients, highlighting the critical need for efficacious treatment and diligent follow-up. The association between LS and autoimmune diseases further necessitates comprehensive investigation to understand the underlying mechanisms and clinical management implications. Future research is essential to confirm these findings and elucidate the role of LS in cancer development.

Outcome Measures in Adult Vulvar Lichen Sclerosus: A Systematic Review
Beth Morrel, Marianne J Ten Kate-Booij, et al.
J Low Genit Tract Dis. 2024 Jul 1;28(3):282-294. doi: 10.1097/LGT.0000000000000819. Epub 2024 May 7.
https://pubmed.ncbi.nlm.nih.gov/38709568/

Objectives: Core outcome domains (CODs) for treatment of adult vulvar lichen sclerosus (VLS) have recently been established through a Delphi study. A number of measuring tools are available for evaluating VLS. The aim of this study is to identify available standardized measurement tools for the major CODs for VLS that have recently been defined, namely, physical findings and quality of life (QoL) specific to VLS. **Results:** Thirty-five studies were included in the systematic review describing 26 tools covering the following 6 outcome domains: QoL-general health, QoL-lichen sclerosus specific, symptoms, clinical signs, emotional impact, and sexual functioning. **Conclusions:** In current research, there is no uniformity in use of measurement tools for evaluating VLS. The established CODs to evaluate treatment of VLS are applicable for evaluating disease course as well. A comprehensive study to reach consensus regarding measurement of physical findings, QoL-lichen sclerosus specific, sexuality, and self-image taking the predetermined CODs and other factors such as age into account is needed.

Assessing the inclusion of women of color in lichen sclerosus treatment studies: a scoping review
Jessica C Evans, Ekene A Ezenwa, et al.
Int J Womens Dermatol. 2024 Jul 29;10(3):e170. doi: 10.1097/JW9.0000000000000170. eCollection 2024 Oct.
https://pubmed.ncbi.nlm.nih.gov/39076890/

Background: Vulvar lichen sclerosus (VLS) is an underrecognized chronic inflammatory skin condition with significant clinical features and potential for malignant transformation. To date, there are no studies comparing the course of this disease in women of color to other racial groups. **Objective:** The objective of this study was to provide a scoping review examining racial demographic data in VLS treatment studies and specifically assessing for the inclusion of women of color. **Results:** Overall, 1340 nonduplicate studies were assessed for eligibility criteria. In total, 65 publications were included. Only 6 included racial demographic data. Black women made up at most 3.8% of the sample population and Latinx women made up at most 5.7%. **Limitations:** Our review focused on a specific intervention (ie, the use of topical corticosteroids for the treatment of VLS), which may restrict the generalizability of our findings to other interventions. No risk of bias assessment was done due to the scoping nature of the review. **Conclusion:** Women of color are underrepresented in studies of topical corticosteroid use in adult women with VLS. Intentional diversity in recruitment will enable the collection of data that is both more accurate and reflective of a broader spectrum of perspectives and life experiences.

Efficacy of dupilumab in the treatment of severe vulvar pruritus associated with lichen sclerosus et atrophicus: a case report
Na Du, Qiuyu Mao, et al.
Front Med (Lausanne). 2024 Jun 26:11:1422389. doi: 10.3389/fmed.2024.1422389. eCollection 2024.
https://pubmed.ncbi.nlm.nih.gov/38988357/

Lichen sclerosus et atrophicus (LSA) is a chronic inflammatory skin lesion with an undefined cause. It is more commonly found in the genital area, particularly in adolescents, premenopausal women and postmenopausal women. LSA is difficult to treat and often recurs. The primary treatment for LSA involves the administration of potent topical corticosteroids. Dupilumab is increasingly being used for the treatment of itching in non-atopic dermatitis patients but there are few reports on its use for the treatment of LSA. Here, we present a case of LSA in a 61-year-old woman with extensive vulvar itching. Over four months of dupilumab therapy, significant therapeutic effects were observed, including vulvar skin thinning and pruritus relief without adverse reactions.

Growing up with juvenile vulvar lichen sclerosus, the experiences and care needs of adult women with lichen sclerosus since childhood: a qualitative exploration
Beth Morrel, Janneke H J Kampherbeek, et al.
Br J Dermatol. 2024 May 21:ljae203. doi: 10.1093/bjd/ljae203.
https://pubmed.ncbi.nlm.nih.gov/38769589/

Background: Vulvar Lichen Sclerosus (VLS) is a chronic remitting condition affecting the genital skin of females of all ages. Although qualitative studies have been conducted focusing on women with VLS in mid-life or older, less is known about the experiences of individuals with VLS from childhood or adolescence onward. **Objective:** To gain understanding of the experiences of women with a history of juvenile VLS (JVLS) regarding the impact of the disease on their personal lives, and their experiences and

needs regarding care and guidance. **Results:** Three main themes were identified. I. Varying impact of living with JVLS: Women experienced diverse emotional and physical impact, from shame and denial to complete acceptance, from restrictions in daily functioning to no limitations. They felt hindered by their own lack of knowledge about JVLS, and generally expressed a positive influence of sharing their experiences with people close to them. II. Finding one's way in care and guidance: While navigating care and guidance, women often felt hindered by knowledge gaps among health care professionals (HCPs), lack of continuity in care and guidance, lack of life-stage adjusted and future-oriented information provision, inadequate guidance around life events, and insufficient monitoring of determinants of therapy adherence. III. Need for patient-tailored care: Patients stressed the need for age-appropriate and life-phase adjusted information, guidance around life-events and compassionate contact with knowledgeable HCPs, aware of the determinants of therapy adherence and influencing factors. **Conclusions:** Age-appropriate life-phase adjusted individually tailored care for women diagnosed with VLS in childhood or adolescence is needed. Care and guidance from childhood onward should encompass a standard of care adapted to the individual as needs change over time. This involves taking interpersonal differences into account, including differences in support network and coping strategies. These findings demonstrate the need for improving awareness and knowledge about (J)VLS among HCPs, especially primary care providers, and among the general public.

Evaluation of the therapeutic effects of Photodynamic Therapy in vulvar lichen sclerosus and impact on patient quality of life and sexual function

Yanxia Cao, Zhongyu Qu, et al.

Photodiagnosis Photodyn Ther. 2024 May 31:104226. doi: 10.1016/j.pdpdt.2024.104226.
https://pubmed.ncbi.nlm.nih.gov/38825158/

Background: Vulvar lichen sclerosus (VLS) is often associated with irritable symptoms of itching, burning pain and can lead to scarring, architectural changes and sexual dysfunction as well as a decline in quality of life.The etiology of the disease is unknown. This study sought to assess the therapeutic effects of Photodynamic Therapy (PDT) in VLS, and improvement of patient quality of life and sexual function. **Results:** The total effective rate of early-stage patients was significantly greater than that of late-stage patients at 6-month after PDT treatment (90.91% [40/44] vs 76.19% [16/21], p <0.05). At 6-month follow-up, the symptoms and clinical signs of patients in early-stage group were significantly improved compared with baseline, the average scores of itching, skin elasticity, whitening and lesion range were significantly lower than the scores before treatment (p <0.05). In late-stage group, The decrease in scores of itching, whitening and lesion range at the 6-months follow-up is significant(p <0.05), but skin elasticity (p=0.0625). On post-treatment follow-up examination, FSFI score was seen to have significantly improved in early-stage patients(from a median score of 17.45 to 21.1, p<0.05); DLQI also significantly improved after treatment (from a median score of 7 to 4, p<0.05). In late stage patients, The DLQI score improved significantly after treatment (from a median score of 18 to 15, p<0.05). However, the improvement in sexual function is not statistically significant (pre-treatment: median=10.55, post-treatment: median=10, p=0.1865). **Conclusion:** Photodynamic therapy can effectively improve most symptoms and clinical signs, as well as quality of life of patients with VLS, especially for early stage patients. Moreover, improvement in sexual function is observed in early stage patients after PDT treatment. This study suggests that early and timely PDT treatment are recommended to achieve better results.