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ABSTRACT BOOK

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ECSVD

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Botulinum toxin A as a treatment for provoked vestibulodynia: A randomized controlled trial

Author(s): **Haraldson Philip**, Department of Clinical Sciences, Division of Obsetrics and Gynecology, Karolinska Institutet Danderyd Hospital, Stockholm, Sweden

Objective: To evaluate pain reduction after two injections of 50 units botulinum toxin A compared to placebo for provoked vestibulodynia.

Methods: We conducted a double-blinded, placebo-controlled randomized trial of 50 units botulinum toxin A or placebo injected in the bulbocavernosus muscles twice, three months apart, in women with provoked vestibulodynia. Primary outcome was self-reported dyspareunia or pain at tampon use reported on a visual analog scale ([VAS] 0-100). Secondary outcomes were pain at weekly tampon insertion (VAS), reduction of pelvic floor hypertonicity measured with a vaginal manometer, adverse events, sexual function and distress. A sample size of 38 participants for each group was calculated to achieve a statistical power of 80%, based on an effect size of 20 VAS-units (0-100), with mean values ranging 56-76 (standard deviation 31).

Results: Between May 2016 and June 2018, 124 women with provoked vestibulodynia were assessed and 88 randomized to botulinum toxin A (n=44) or placebo (n=44). Primary outcome showed a lower but statistically non-significant pain rating by 7 VAS units, 95% CI [-15.0, 0.4], in the botulinum toxin A group compared to placebo. Secondary results showed a significant decrease in pain at weekly tampon insertion by 11 VAS units, 95% CI [-16.6, 6.0]with botulinum toxin A injection. The vaginal manometer measured lower maximum contraction strength by 7 mmHg, 95% CI [-12.7, -2.4], and lower 10 s endurance strength by 4 mmHg, 95% CI [-7.72, -1.16] in the BTA group compared to placebo. No changes were observed for sexual function and distress, but there was a significant increase in women attempting vaginal intercourse in the BTA group by 0.27, 95% CI [0.06, 0.48]. No severe adverse events were reported.

Conclusion: Twice repeated injections of 50 units of botulinum toxin A in women with provoked vestibulodynia did not reduce dyspareunia or pain at tampon use, but secondary outcomes suggested positive impacts of the treatment.

Internet-based treatment for vulvodynia (EMBLA) – a randomized controlled study

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Introduction: To date, to our knowledge there are no published trials investigating the effects of internet-based treatment grounded on Acceptance and Commitment Therapy (ACT) for women with vulvodynia. Internet-based interventions might increase availability and thereby health care for women with vulvodynia. The aim of this study is to examine the effects on vulvar pain of a guided internet-based intervention based on ACT during the waiting period for clinical treatment.

Methods and analysis: This study included 99 participants. Participants were randomized to either internet-based intervention or to a wait-list control condition. The intervention consisted of a guided internet-based ACT-treatment for six weeks. The information modules contained information and assignments. The information modules addressed anatomy, pelvic floor muscle function, sexuality, chronic pain, and vulvodynia. Furthermore, information is presented about the different processes such as willingness, acceptance, cognitive defusion and committed action. The exercise modules contained information and exercises on mindfulness, pelvic floor muscles, and desensitization. Online assessments were conducted before the internet-based intervention, directly after, and at follow-up after nine months. The primary outcome measure was vulvar pain. Statistical analysis was carried out using an intention-to-treat approach. General linear models was used for analysis of the intervention effect on continuous measures and non-parametric tests were be used for nominal and ordinal data.

Results: There were no significant differences between groups at baseline in socio-demographic characteristics, pain-related variables, depression, and anxiety symptoms, except for the variable attempt to intercourse (p=0.01). The dropout rate between randomization and post-treatment was 30.3%. There is a higher percentage of Non-Swedish women and women who have been subjected to physical and sexual violence among dropouts.

No significant statistical difference at post-treatment was found between groups for the tampon test (pain and discomfort), willingness to perform tampon test and impact om sexual function. A much lower proportion attempted vaginal intercourse in the intervention group (p=0.003).

Conclusion: Internet-based treatment has no short-term effect on vulvar pain but has an impact on sexual behavior.

Hydroxychloroquine sulphate: a safe and effective treatment in erosive lichen planus of the vulva and vagina

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Background: Erosive lichen planus of the vulva and vagina (ELPV) is a rare, chronic autoimmune disease, presenting with painful erosions and destructive scarring of the skin and mucosa. Up to 45% of patients do not achieve remission with topical treatments. Evidence for systemic treatments remains scarce, hindering proper management. Hydroxychloroquine (HCQ) is used in daily practice as first-line therapy in ELVP. However, little evidence is available on HCQ for the treatment of ELPV. Objectives The aim of this study was to retrospectively analyze the effectivity and safety of HCQ in ELPV patients.

Methods and materials: This retrospective observational case series was performed at the University Medical Center Groningen, The Netherlands. Medical records of patients diagnosed with ELVP were analyzed. The Physician Global Assessment score was used to assess the effectivity of HCQ. Adverse events (AE) were graded with the Common Terminology Criteria for Adverse Events.

Results: Fifteen out of twenty adults diagnosed with ELPV, and treated with HCQ between January 2009 and December 2020, were included. Thirteen patients (86.6%) showed improvement, of which eight (53.3%) achieved a good response. The median time till response was six months [range 1-12 months]. Six patients (40.0%) experienced temporary disease flare-ups during treatment, mainly due to concomitant infections. In eight patients, HCQ was discontinued, due to ineffectiveness (n=6), an AE (n=1) and development of malignancy (breast cancer, n=1). The median treatment duration was 23.3 months [range 4.1-81]. Eight patients (53.3%) experienced one or more mild to moderate AEs during treatment, most commonly infections and gastro-intestinal complaints. Only one patient experienced a severe AE, i.e. hearing loss, which resolved after cessation of therapy.

Conclusion: In conclusion, HCQ can be an effective and safe long-term treatment in ELPV patients who require systemic therapy. Future multicenter prospective studies are needed to assess the role of HCQ in ELPV treatment.

Safety and efficacy of oral hydroxychloroquine in recalcitrant erosive vulval lichen planus

Author(s): **Akufo-Tetteh Emily**, University Hospitals Birmingham NHS Foundation Trust, **Velangi Shireen**

Lichen Planus (LP) is a chronic inflammatory condition affecting the skin and mucosa. Vulval LP manifests as pain, burning and erosions. It can significantly affect quality of life. Although the majority of patients respond to potent or superpotent topical steroids, some patients are resistant to topical therapy and therefore systemic agents are used. These include tetracyclines, acitretin, methotrexate and hydroxychloroquine (HCQ). To date there is no good quality evidence for the use of systemic treatment in vulval LP and difficulty in establishing a trial to support any particular treatment (1). We report our findings from a retrospective case note review on our use of HCQ in erosive LP. Our dermatology department typically sees 30-35 vulval patients each month. Of these 4% have vulval LP. The majority of these patients respond to topical treatments and less than 5% are on systemic treatment. We reviewed notes of patients taking HCQ for erosive or orogenital LP over a 4.5 year period. In this time 8 patients were started on HCQ; 6 had erosive LP (the indication for one was Sjogren's syndrome) and 2 had orogenital LP. The starting dose varied between 200mg OD (3) and 200mg BD (5). Maintenance doses were continued at 200mg BD for 2 patients, 200mg OD for 5 patients and 100mg OD for 1 patient. 6/8 patients had a marked improvement in both symptoms and objective examination after starting HCQ. Interestingly the patient who was taking HCQ for Sjogren's did not improve for 2 years therefore it is unclear whether this was due to HCQ. 1 patient was also on prednisolone. Time to improvement was noted to be between 1 week and 2 years although typically patients noted an improvement within a few months. 1 patient has stopped her medication as her LP was burnt out and 1 patient was lost to follow-up. 6 patients remain under good control. Our findings suggest that HCQ is a relatively successful 2nd line agent in treating vulval lichen planus. Its favourable side effect profile suggests that it is preferable to methotrexate until further evidence is available.

Juvenile and adult vulvar pemphigoid, an under recognized entity: Case series of fourteen patients

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Background: vulvar pemphigoid is a rare subtype of subepidermal autoimmune blistering diseases, with a wide variation in disease severity. Data on this entity is scarce, and patients are often misdiagnosed with lichen sclerosis or erosive lichen planus, due to overlapping clinical and histological features. Objectives: to evaluate the clinical, histological and immunological characteristics of patients diagnosed with vulvar pemphigoid.

Methods: data of patients diagnosed with juvenile and adult vulvar pemphigoid was obtained from medical charts between 2001 and 2018 at the Center for Blistering Diseases in Groningen, the Netherlands.

Results: a total of 14 patients were included. The age of onset ranged between 5 and 13 years in the juvenile group, and 48 and 91 in the adult group. The median diagnostic delay was 12 months. Vulvar erosions, ulcerations and erythema were most frequently seen. Five patients of the adult group presented with scar formation. . Extragenital mucosal involvement was seen in six patients. The diagnosis was made by a biopsy for direct immunofluorescence microscopy. All patients had linear deposition of IgG, IgA and/or C3c at the basement membrane zone. Indirect immunofluorescence microscopy on salt-split skin demonstrated circulating IgG and/or IgA at the epidermal side in six patients. Immunoblotting revealed antibodies to BP180 antigen in eight patients. ELISA NC16A titers showed IgG antibodies against the NC16A domain of BP180 in seven patients. All patients received topical treatment. In addition eight patients, mainly adults, required systemic immunosuppressive therapy to control the disease.

Conclusions: diagnosing vulvar pemphigoid is challenging due to overlapping features with other chronic vulvar diseases. Direct and indirect immunofluorescence microscopy and immunoserology are essential to ascertain the diagnosis

Vulvar fordyce adenitis in a cohort of 45 women

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Background: Vulvar sebaceous adenitis is a recently individualized condition characterized by recurrent episodes of painful papules and nodules, mostly located on the labia minora.

Objectives: The primary aim of the study was to go further into the clinical features of this rarely reported condition. The secondary aim was to collect therapeutical data from our cases.

Methods: In this retrospective cohort study, the files and the photographs of patients suffering from vulvar sebaceous adenitis were extracted from the database of one vulvar specialist (personal cases and advices required by colleagues). Clinical, pathological and therapeutical data were analyzed.

Results: Forty-five women were included. The median age at the time of diagnosis was 36 (range, 16-60). The median delay to the diagnosis was 6.5 years (range, 0-35). The clinical features included recurrent painful (=34) papules, pustules or nodules leading to suppuration (n=22) or leaving a pitted scar (n=10). The lesions involved the labia minora (n=41) and the inner aspect of the labia majora (n=19). Seventeen patients out of 24 (65%) had a concomitant acne. Hidradenitis suppurativa, androgenic alopecia and hirsutism were observed in 3, 1 and 1 cases respectively. Biopsies performed in 4 patients revealed an inflammatory infiltrate surrounding the Fordyce sebaceous gland and the pilosebaceous duct. Tetracyclines and oral zinc were inconstantly effective (partial or complete response in 10/12 and 8/13 patients respectively). Isotretinoin led to a complete remission in 4 patients who did not respond to tetracyclines.

Conclusion: Vulvar sebaceous adenitis is a clinically identifiable cause of painful recurrent inflammatory lesions of the labia minora and, more rarely, inner labia majora. We suggest that the term vulvar Fordyce adenitis could be more appropriate. The association with acne and hidradenitis suppurativa is probably not fortuitous. Due to the clinical similarities with acne, we suggest a therapeutical approach similar to oral acne treatment.

Causes of death of women with lichen sclerosus and lichen planus

Author(s): **Halonen Pia**, University of Helsinki, **Jakobsson Maija, Heikinheimo Oskari, Gissler Mika, Pukkala Eero**

Objective: Lichen sclerosus (LS) and lichen planus (LP) are chronic inflammatory skin diseases with unknown etiology and pathogenesis. Health consequences of the diseases – apart from cancer risk – are scarcely studied. The objective of this study was to assess the all-cause and cause-specific mortality of women diagnosed with LS or LP.

Methods: The nationwide Hospital Discharge Register was used to identify all women diagnosed with LS and LP in Finland 1969-2012 (n=7,790 and 13,378). Dates and causes of death until 2014 were gathered from Statistics Finland and the Finnish Cancer Registry. Standardised mortality ratios (SMR) were calculated with the mortality rates of the Finnish female population as a reference.

Results: Among 7,790 women diagnosed with LS, 1,206 deaths occurred within a mean follow-up of 8.8 years. The all-cause mortality was reduced (SMR 0.84, 95% confidence interval (CI) 0.78-0.90). The reduction was due to decreased risk of death from circulatory diseases (SMR 0.80, 95% CI 0.72-0.89) and dementia and Alzheimer's disease (SMR 0.75, 95% CI 0.62-0.88). The risk of death from vulvar cancer was increased (SMR 28.1, 95% CI 19.3-39.4). Among 13,378 women diagnosed with LP, 2,426 deaths occurred within a mean follow-up of 10.7 years. The overall mortality was increased (SMR 1.07, 95% CI 1.02-1.11), with excess mortality from infections (SMR 1.78, 95% CI 1.14-2.64), respiratory diseases (SMR 1.31, 95% CI 1.07-1.57), and diseases of the digestive system (SMR 1.39, 95% CI 1.09-1.75). Additionally, increased mortality was seen from cancer of the oral cavity (SMR 10.5, 95% CI 5.99-17.0), cancer of tongue (SMR 7.25, 95% CI 3.13-14.3), Hodgkin lymphoma (SMR 6.73, 95% CI 1.83-17.2), and non-Hodgkin lymphoma (SMR 1.68, 95% CI 1.11-2.44).

Conclusion: LS shows a favourable and LP a detrimental effect on overall mortality. The decreased mortality of LS women may arise from a healthier lifestyle, whereas the increased mortality of LP women may reflect more wide-spread effects of inflammation in this lichen.

Laser therapy for lichen sclerosus: A systematic review of the current evidence base

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Background: Lichen sclerosus (LS) is a chronic, inflammatory genital skin condition. Initial treatment with superpotent topical corticosteroids is the accepted first-line therapy. For those who do not respond after exclusion of other potentiating factors, the best second-line therapy is unclear. Laser therapy is an emerging treatment for LS and despite uncertain efficacy its use is gaining popularity in the private sector.

Aims: This study aimed to review the effectiveness of laser therapy for genital LS in men, women and children.

Methods: We conducted a systematic review of all primary studies reporting the use of laser in genital LS. Ovid MEDLINE, PubMed, Ovid Embase, Cochrane CENTRAL, Web of Science, CINAHL and PsycINFO were searched from inception to February 2020. Studies of extragenital LS, case series with fewer than 5 patients and case reports were excluded. Outcomes assessed were i) clinical signs, ii) patient reported symptoms, iii) quality of life (QoL) and iv) sexual function. Hand searching of identified papers was performed. Screening, data extraction and quality assessment using the revised Cochrane risk-of-bias tool for randomised trials was performed independently by two authors with a third author to resolve any disagreements. Reporting was carried out in accordance with PRISMA guidelines. The study was prospectively registered on PROSPERO database (CRD42019143039).

Results: A total of 18 studies, involving 498 adults, met inclusion criteria. These were 4 randomised controlled trials (RCTs), 1 non-randomised trial, 7 single arm trials and 6 case series. We report a subsection of 3 studies that used laser as a light source for PDT to treat LS. Where assessed, the studies suggest that laser therapy in patients with LS improves symptoms, clinical signs, QoL and sexual function. However, results were highly heterogeneous and methodological quality was very low. Metaanalysis was not possible.

Conclusion: There are limited data available. Overall there is poor evidence to support the use of laser therapy for LS at present. However, there are 4 registered RCTs, 2 of which are sham controlled but results are not yet reported. Effectiveness of laser needs to be robustly investigated in well-conducted RCTs and the side effect profile needs to be further investigated

Barriers to adherence with prescribed topical therapy among female patients with lichen sclerosus

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Lichen sclerosus (LS) is a chronic inflammatory dermatosis that predominantly affects the anogenital region. First line treatment is with topical clobetasol propionate 0.05%. Vulval LS is associated with a risk of progression to vulval squamous neoplasia, which is estimated to occur in approximately 1-5% of patients. It has been shown that individualised treatment regimens with long-term topical corticosteroid (TCS) may modify the course of disease in LS and reduce the risk of complications. Our study evaluated compliance with prescribed TCS among female patients with LS, identified possible reasons for non-compliance, and explored the advice being received by patients from pharmacists and General Practitioners (GPs) about TCS use. Female patients with a diagnosis of LS attending the dermatology clinic were identified and invited to participate by completing an anonymous questionnaire. To date, 68 patients have completed the questionnaire. Using the validated 4-item Morisky Medication Adherence scale modified for LS, 28% (n=19) of patients were classified as low adherers to prescribed treatment, 49% (n = 33) medium and 23% (n=16) high. The most common reasons for missing treatment applications included forgetting (39%), concerns about using too much TCS (34%), concerns induced by the instruction to "apply thinly" (27%) and concerns about using TCS on broken skin (27%). Regarding advice received from other healthcare professionals, 40% of patients reported being told often or always by their pharmacist and 35% by their GP that TCS cause skin thinning. 40% of patients reported being told often or always by their pharmacist and by their GP that TCS should be used sparingly. 25% of patients reported that pharmacist had advised them not to use the TCS as frequently or for as long as the dermatologist had prescribed. Treatment adherence is sub-optimal among our patients with LS. Advice being given to patients by other healthcare professionals regarding risks associated with TCS is a barrier to compliance. Dermatologists play a key role in counselling patients regarding treatment of LS and TCS use in view of conflicting messages they may receive from other healthcare professionals. There is a need to educate our colleagues on LS and its optimum treatment.

Vulval white sponge nevus, report of one sporadic and two familial cases

Author(s): **Plantier Francoise**, cabinet mathrurin moreau Paris, **Angeli Kathlene**, **Kuffer Roegr**

The White sponge nevus (WSN) is a rare autosomal dominant benign condition caused by mutations in the genes that encode mucosa-specific Keratin-4 and Keratin-13. It affects the non-keratinized stratified squamous epithelium and is mainly observed in the oral cavity. It may simultaneously manifest itself in other regions, including the vulva, vagina, cervix, and perianal area. The lesions may develop at birth or later in childhood or adolescence. Clinically it consists in bilaterally symmetrical, thickened white, corrugated or velvety, diffuse plaques, varying in severity. Its histological picture is very characteristic, with epithelial acanthosis and parakeratosis, and with a cytoplasmic clearing of the upper part of the epithelium and perinuclear eosinophilic condensations, which correspond to tonofilament aggregates. We report here four vulvar cases of this very rare disease, including three cases with oral involvement, and two familial cases, in a mother and her daughter. Familial cases are uncommon due to irregular penetrance of the disease. We discuss the numerous clinical and pathological differential diagnoses. We demonstrate that an invasive biopsy it not always essential for histological identification of the disease. Molecular genetic analysis is not essential either. Because WSN is asymptomatic and benign, it requires no treatment.

Low reproducibility of histological diagnosis of differentiated vulvar intraepithelial neoplasia: A bi-national ring study

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Differentiated vulvar intraepithelial neoplasia (dVIN) is a premalignant lesion that can progress rapidly to invasive carcinoma. Since the histology of dVIN can be subtle, the diagnosis is often challenging for pathologists. Nevertheless, accurate histological diagnosis is crucial, as this guides patient management. We sought to identify reliable diagnostic features of dVIN through assessing the inter-observer agreement for the diagnosis and in the interpretation of the histological features. Two investigators from Erasmus MC selected 36 hematoxylin-eosin stained glass-slides of dVIN and no-dysplasia, and prepared a list of 15 histological features of dVIN. Nine pathologists from seven centers within the Netherlands and Belgium assessed the slides without any clinical information. All participants (i) independently diagnosed each slide as dVIN or no-dysplasia, (ii) indicated which features (from the list) they used for the diagnosis, and (iii) rated the features in terms of their diagnostic usefulness. Fleiss' Kappa and Cohen's Kappa (□) were computed to measure the overall and pair-wise agreements respectively. For the diagnosis of dVIN, overall agreement was moderate (□=0.45); pair-wise agreements ranged from slight to substantial (□: 0.11–0.75). Among the histological features, highest overall agreement (moderate) was obtained for parakeratosis (□=0.54), mitotic count > 5/5 mm (□=0.44), and atypia discernable under 100X magnification (□=0.41). Pair-wise agreements for the histological features ranged from slight to almost-perfect (□: 0.01–1). Based on the levels of pair-wise agreements and ratings of usefulness, the top five helpful features were parakeratosis, cobblestone appearance, angulated nuclei, chromatin abnormality, atypia discernable under 100X, and elongated and/or anastomosing rete ridges. In this study, overall agreement for the diagnosis, or in the interpretation of histological features of dVIN was at most, moderate. This highlights the need for establishing immunohistochemical or molecular biomarkers that can improve the diagnostic agreement and help avoid treatment disparities.

Prevalence of cervical dysplasia among migrant women with female genital mutilation/cutting

Author(s): **Azuaga Martinez Alicia**, Groupe médical de Champel (GUH collaborator), **Frick Albertina**, **Abdulcadir Jasmine**

Objectives/purposes of the study: To assess the prevalence of severe cervical dysplasia (HSIL+) among migrant women with Female Genital Mutilation/Cutting (FGM/C) at a specialized clinic in Switzerland.

Methods: This is a descriptive retrospective cross-sectional study. We reviewed the electronic medical records of all women who attended a specialized FGM/C clinic at Geneva University Hospitals between 2010 and 2016. We examined sociodemographic data, sexually transmitted infections (STI), FGM/C types, Pap smear results, and follow-up in women diagnosed with cervical dysplasia. We focused on the analysis of cervical dysplasia on women with FGM/C-III.

Results: Three hundred and sixty records were reviewed, and 338 women were included. The average age was 33.03 (SD 7.47) years. Most women were from Eritrea and Somalia (n=204, 60.35%) and had FGM/C type III (n= 188, 55.62%). 12.42% (n=42) of patients had abnormal Pap smears: 1.48% (n=5) with ASCUS with high-risk (HR) HPV, 7.98% (n=27) with LSIL+, and 2.95% (n=10) with HSIL+. Of the 37 patients with dysplasia, 22 (59.45%) completed follow-up and 15 (40.54%) received incomplete follow-up. From the 188 women with FGM/C-III ; 60% (n=113) had undergone defibulation, mostly (92.9%, n=105) without undergoing reinfibulation. Cervical dysplasia was found in 10.6% (n=20): 8.5% (n=16) had a L-SIL or ASCUS HPV positive, 2,1% (n=4) had an H-SIL (one of them was an in situ carcinoma). Women with dysplasia underwent colposcopies on a regular basis in 35% of the cases (n=7) irregularly in 25%(n=5) and dropped out the colposcopy follow up in 40%(n=8)

Conclusions: The prevalence of HSIL+ among migrant women with FGM/C is high (2.95%) compared to the general Swiss population (0.58%). High rates of dropping of the colposcopy follow up shows that efforts must be improved by increasing provider knowledge of this patient population and by addressing barriers to care.

Key Words: cervical dysplasia, female genital mutilation (FGM), female genital cutting (FGC), female genital mutilation/cutting (FGM/C), refugees, high-grade squamous intraepithelial lesion (HSIL), Female genital mutilation type III, Infibulation, defibulation

In vivo ImagingeBased 3-dimensional pelvic prototype models to improve education regarding sexual anatomy and physiology

Author(s): **Abdulcadir Jasmine**, Geneva University Hospitals, **Dewaele Romain, Firmenis Natacha, Remuinan Jorge, Petignat Patrick, Botsikas Diomidis, Crockmann Céline**

Background: Myths, misconceptions and taboos about sexual anatomy and physiology are common, and can affect sexual health and maintain harmful practices and beliefs.

Aim: To construct a female and a preliminary male three-dimensional-(3D) pelvic model on the basis of in vivo-imaging, that could be studied in sex education and clinical practice.

Methods: We retrospectively studied the images of 200 female pelvic magnetic resonance examinations and reviewed the literature to choose the optimum magnetic resonance imaging (MRI) protocol for the study of the clitoris and surrounding organs. We also conducted a cross-sectional study of 30 women who were undergoing a pelvic MRI. Fifteen women had undergone female genital mutilation/cutting (FGM/C) involving the clitoris and 15 had not. The best-quality MRI images of three uncut and one cut clitoris, together with the principal surrounding pelvic organs, were selected to generate 3D reconstructions using dedicated software. The same software was used to reconstruct the anatomy of the penis and the principal surrounding pelvic organs, based on contrast-enhanced computer tomography (CT) images. Images of both models were exported in .stl format and cleaned to obtain single manifold objects in free, open source software. Each organ model was sliced and 3D printed. A preliminary feedback was collected from 13 potential users working in urology, gynaecology, sexual medicine, physiotherapy and education.

Results: A kit of 3D pelvic models and two-dimensional (2D) figures of female and male sexual anatomy. Files for 3D printing. Positive feedback and suggestions from potential users.

The models were based on in vivo imaging, can be dismantled/reassembled and show analogous anatomical structures of the clitoris and the penis. The female models represent diversity, including women with FGM/C. The limitations are that the male model is preliminary and can be improved if based on an MRI; that imaging-based anatomical representations can differ from anatomical dissections and that the models represent the sexual organs at rest or during an unknown state of arousal only.
Conclusion: Our kit can be studied in anatomy, biology and sex education, as well as in clinical practice.

Chronic vulvar pain after female genital mutilation/cutting: Prevalence, etiologies and treatments

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Introduction: Chronic vulvar pain is a condition that affects many women during their lifetime, including women with Female Genital Mutilation/Cutting (FGM/C).

Aim: To study the prevalence, etiologies and surgical treatments of chronic vulvar pain among women living with FGM/C. Methods: We conducted a retrospective review of consecutive medical files of 506 women who consulted our specialized clinic for women with FGM/C between April 1, 2010 and December 31, 2017.

Main Outcome Measures: Prevalence, etiologies, surgical treatments and subjective reduction of chronic vulvar pain in women with FGM/C. Results: Chronic vulvar pain was present in 14 women (2.8%). Pain was unprovoked in 1 case (7.1%) and provoked in the 13 other cases (92.9%). In most of the cases, women presented vulvar pain related to scar complications such as clitoral or peri-clitoral adhesions or scar tissue (n=3, 21.4%), bridle scars (n=1, 7.1%), post-traumatic neuromas (n=2, 14.3%) and vulvar cysts (n=6, 42.9%), the latter being strongly associated to FGM/C type III (p=0.001). In 2 cases (14.3%) of chronic vulvar pain, no lesions other than FGM/C were visible at clinical examination. Dyspareunia was present in 123 women (24.3%). Among them, 73 women (14.4%) suffered from superficial dyspareunia and 24 (4.7%) from deep dyspareunia. Fourteen women (2.8%) reported both superficial and deep dyspareunia. Twelve women (2.3%) reported dyspareunia with no specified localization documented in the medical charts. Dyspareunia was significantly more frequent among infibulated women compared to women with FGM/C different from type III (p=0.029). Surgical treatment was conducted in 21.9% of women with dyspareunia (n=25) and successfully treated superficial dyspareunia in 16 cases out of 25 (64.0%). In the 9 remaining cases, post-op pain was unknown due to loss of follow-up. Among women with vulvar pain, 71.4% underwent surgical treatment (n=10), and 90% experienced resolution of pain, with 1 patient (10%) lost of sight after surgery.

Conclusion: Chronic vulvar pain after FGM/C is mainly associated with scar complications and FGM/C type III. Safe and effective surgical techniques treating such conditions are defibulation, clitoral reconstruction, and removal of vulvar scar complications (cystectomy, neuromas' excision, and bridles/adhesions removal). Non surgical treatments are yet to be studied

Therapeutical effect of a combination of pea protein, grape seed extract and lactic acid in an in vivo model of bacterial vaginosis

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Background: Bacterial vaginosis (BV) is the most commonly reported vaginal infection among women of reproductive age, with a prevalence reported to range from 23 to 29%. BV is characterized by reduced numbers of lactobacilli and overgrowth of a polymicrobial consortium often containing large numbers of Gardnerella vaginalis. Current recommended treatments involve the use of topical and oral antibiotics; however BV recurrence is increasing due to the rising number of antimicrobial resistant species; therefore newtreatments are needed for the management of BV. Thus, this study aims to evaluate the therapeutic effect of a product containing substances of natural origin – pea protein, grape seed extract and lactic acid - in a G. vaginalis-induced BV mouse model.

Method: Mice were infected with an intravaginally injection of G. vaginalis (1 × 106 CFU /20 µL saline). Product containing pea protein, grape seed extract and lactic acid was administered intravaginally once a day for 7 days beginning the day after infection or 1 h before infection. Mice were sacrificed 24 h after the final treatment.

Results: Intravaginal preventive and curative treatment significantly decreased G. vaginalis adhesion and invasion into vaginal tissues, significantly reduced myeloperoxidase activity as a marker of tissue inflammation and significantly preserved tissue architecture following bacterial infection. Contextually, a mucoadhesion test showed a significant percentage of binding of the product to vaginal tissue validating its protective barrier mechanism of action.

Conclusion: In conclusion, results demonstrate that the product containing pea protein, grape seed extract and lactic acid is effective for the management of G. vaginalis induced bacterial vaginosis, as both preventive and curative treatment.

A new approach for the treatment of recurrent vulvovaginal candidiasis with a combination of pea protein, grape seed extract and lactic acid assessed in vivo

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Background: Vulvovaginal candidiasis (VVC) is considered the second most common vaginal infection, affecting 75–80% of women at least once in their lifetime. Among these women 5-10% subsequently experience recurrent vulvovaginal candidiasis (RVVC). Current therapies involve antifungals that provide static effects but do not prevent recurrences because of the increased antimicrobial resistance. Alternative therapies to antifungals are needed in order to prevent RVVC. Thus, this study evaluates the therapeutic effect of a product containing substances of natural origin – pea protein, grape seed extract and lactic acid – alone or in association with clotrimazole in a murine model of RVVC.

Method: To simulate RVVC, mice received three separate vulvovaginal infections with 5 × 104 C. albicans strain SC5314 divided in three round of 11 days. Infections were allowed to last untreated for 4 days during each round of infection, followed by 7 days of treatment intravaginally with product containing a combination of pea protein, grape seed extract and lactic acid alone or in association with clotrimazole. Mice in control group received inoculations of saline and vaginal lavages same manner as infected mice.

Results: Results show that intravaginal treatment with the product alone preserved significantly vaginal tissue architecture and reduced significantly neutrophil infiltration as well as pro-inflammatory prostaglandin (PGE)-2. In addition, results demonstrate that the products containing pea protein, grape seed extract and lactic acid increases antifungal efficacy if administered concomitantly. Indeed, the association of the product with clotrimazole preserved significantly vaginal tissue architecture following three repeated C. albicans infection as well as neutrophil infiltration. Significance was also confirmed for PGE-2.

Conclusion: Taken together, results demonstrate that the combination of pea protein, grape seed extract and lactic acid is effective for the management of RVVC and prove to increase azoles efficacy if administered concomitantly.