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This newsletter is quarterly and contains abstracts from medical journals published between January and March 2009. Abstracts presented at scientific meetings may also be included. Please direct any comments regarding this newsletter to chris@nva.org.

Vulvodynia/Pain

How young does vulvo-vaginal pain begin? Prevalence and characteristics of dyspareunia in adolescents.

Landry T, Bergeron S

J Sex Med. 2009 Feb 4. [Epub ahead of print]

ABSTRACT Introduction. Dyspareunia remains under-investigated despite recent population-based studies indicating that its prevalence ranges from 12% to 21% in adult women. Although clinical data suggest that dyspareunia can begin during adolescence, a large-scale epidemiological study has yet to be conducted with this population. Aims. To determine the prevalence and characteristics of dyspareunia in a large-scale sample of adolescents, in addition to the characteristics of vulvo-vaginal insertion pain in nonsexual contexts. Methods. With written informed consent, data were obtained from 1,425 girls (12-19-year-olds), from seven metropolitan high schools during regular school hours using a self-report questionnaire. Main Outcome Measures. Dyspareunia prevalence was evaluated by asking sexually active participants whether or not they regularly (at least 75% of the time) experienced pain during intercourse. Pain duration, context of onset, location, intensity, and pain during tampon insertion and pelvic exams were evaluated. Results. Results revealed that 20% of sexually active girls (N = 251) reported having regular pain during intercourse for at least 6 months or more. A primary form of pain was reported by 67% of adolescents and significantly more girls with chronic dyspareunia identified the vaginal opening (39%) as being their most painful site compared with internal pain sites (18-29%) (P = 0.042). Chronic dyspareunia cases reported significantly more pain during first and usual tampon insertion (P = 0.003; P = 0.009) than pain-free controls, while no difference was found between groups regarding pelvic exams (P = 0.086). Experiencing severe pain at first tampon insertion was linked to a fourfold risk of reporting chronic dyspareunia (P = 0.001). Conclusions. Results mirror prevalence estimates found in population-based studies with adult women and suggest that chronic dyspareunia is a significant sexual health problem in adolescent girls, with pain extending beyond intercourse to nonsexual contexts.

Young Swedish women's experience of pain and discomfort during sexual intercourse.

Elmerstig E, Wijma B, Swahnberg K

Acta Obstet Gynecol Scand. 2009;88(1):98-103.

OBJECTIVE: To study experience and prevalence of (1) pain related to first sexual intercourse; (2) pain and/or discomfort associated with sexual intercourse during the previous month; and (3) associations between these experiences. DESIGN: Cross-sectional study. SETTING: A youth center in southeast Sweden. SAMPLE: Three hundred consecutive women, aged 13-21 (response rate 98%). METHOD:

During a two-month period, women consulting a youth center, participated in a questionnaire study. MAIN OUTCOME MEASURES: Pain and/or discomfort during sexual intercourse. RESULTS: The majority of the participants, 98%, had had sexual intercourse and of those, 65% reported pain related to first sexual intercourse. Forty-nine percent (99/203) of those who reported sexual intercourse during the previous month had experienced coital pain and/or discomfort during that period, and for almost every second woman (46/99), those experiences constituted a problem. We found no association between experience of pain during first sexual intercourse and pain and/or discomfort during the previous month. CONCLUSIONS: Prevalence of pain and/or discomfort associated with sexual intercourse is high among women visiting a youth center. Our results show that coital pain in young women is a problem which needs to be further explored.

Persistent genital and pelvic pain after childbirth.
Paterson LQ, Davis SN, Khalife S, Amsel R, Binik YM
J Sex Med. 2009 Jan;6(1):215-21.

INTRODUCTION: Although genital pain and pelvic pain are common and well-documented problems in the early postpartum period, little is known about their course. The few published studies of such pain beyond 1 year postpartum have focused primarily on the perineum and have not assessed pain onset. AIM: To investigate the prevalence and characteristics of all types of genital and pelvic pain in the second year postpartum, and to explore risk factors for their persistence. METHODS: Over a 6-month period, a questionnaire on genital/pelvic pain, sociodemographic and childbirth variables, breastfeeding, and chronic pain history was mailed to patients of the collaborating obstetrician at 12 months postpartum. MAIN OUTCOME MEASURES: The prevalence, characteristics, and correlates of persistent genital/pelvic pain with postpartum onset. RESULTS: Almost half of the 114 participants (82% response rate; M = 14 months postpartum) reported a current (18%) or resolved (26%) episode of genital or pelvic pain lasting 3 or more months. Just under one in 10 (9%) mothers continued to experience pain that had begun after they last gave birth. This pain was described at various locations (e.g., vaginal opening and pelvic area), as moderate in intensity and unpleasantness, and most often as burning, cutting, or radiating. Although it was triggered by both sexual and nonsexual activities, none of the mothers affected were receiving treatment. Univariate analyses revealed that only past diagnosis with a nongenital chronic pain condition (e.g., migraine headache) was significantly correlated with (i) any history of chronic genital/pelvic pain or (ii) the persistence of pregnancy- or postpartum-onset genital or pelvic pain. CONCLUSIONS: Postpartum genital and pelvic pain persists for longer than a year for a significant percentage of mothers. Women with a history of other chronic pain appear to be particularly vulnerable to developing persistent genital or pelvic pain.

Dyspareunia in Puerto Rican middle-aged women.
Avellanet YR, Ortiz AP, Pando JR, Romaguera J
Menopause. 2009 Feb 2. [Epub ahead of print]

OBJECTIVE:: Dyspareunia seems to be a common sexual dysfunction. There is a lack of studies that address female sexual dysfunction in Puerto Rico. The present cross-sectional study characterized dyspareunia in a sample of Puerto Rican women aged 40 to 59 years and evaluated the relationship between reported dyspareunia with demographic, lifestyle, and health factors. METHODS:: Nine hundred twenty Puerto Rican women participated in health fairs conducted in 22 municipalities between May 2000 and November 2001 where they filled out a questionnaire. Contingency table and chi statistics were used to evaluate the bivariate associations of dyspareunia with demographic, lifestyle, and health factors. Crude and multivariate logistic regression models were used to estimate the magnitude of the association between dyspareunia and demographic, lifestyle, and health factors. RESULTS:: The overall prevalence of dyspareunia in this population was 18%. Dyspareunia was somewhat lower among women aged 40 to 49 years (17%) than among those aged 50 to 59 years (21%), not reaching statistical significance. Dyspareunia was associated with educational attainment, employment status, menopause status, current hormone therapy use, genitourinary symptoms, and loss of libido ($P < 0.05$). Current cigarette smoking, body mass index, physical activity, alcohol use, parity, and overuse of oral contraceptives were not

associated with dyspareunia in bivariate analysis (P > 0.05). In the multivariate analysis, incontinence (prevalence odds ratio [POR], 1.67; 95% CI, 1.02-2.73), vaginal dryness (POR, 3.97; 95% CI, 2.49-6.31), vaginal itching (POR, 2.44; 95% CI, 1.55-3.83), loss of libido (POR, 3.08; 95% CI, 1.92-4.94), and partnership (POR, 2.22; 95% CI, 1.29-3.82) remained associated with dyspareunia. CONCLUSIONS:: Our results agree with previous studies. Additional studies of female sexual dysfunction in Puerto Rican women are highly warranted.

Assessment of sexuality among middle-aged women using the Female Sexual Function Index.
Chedraui P, Perez-Lopez FR, San Miguel G, Avila C
Climacteric. 2008 Dec 31:1-9. [Epub ahead of print]

Objective: The purpose of the present investigation was to assess sexual function among middle-aged women and determine related risk factors (personal and partner) for sexual dysfunction. Methods: In this cross-sectional study, women aged 40-59 years were requested to fill out the Female Sexual Function Index (FSFI) and a general demographic questionnaire containing personal and partner data. Results A total of 409 women with a mean age of 47 +/- 5.3 years were surveyed. Of these, 42.1% were premenopausal, 24.4% perimenopausal and 33.5% postmenopausal. At the time of survey, 10.5% of women were hysterectomized, 1.5% used psychotropic drugs, and 9.8% were on hormone therapy (HT) for the menopause; 28.1% had less than 12 years of schooling and 80.4% had only one partner at the moment of survey. Among their male partners, 7.3% abused alcohol, 10.3% had erectile dysfunction, 11.2% premature ejaculation and 63.83% were faithful partners. Mean (+/- standard deviation) scores for the FSFI domains were: desire (3.7 +/- 1.2), arousal (3.1 +/- 2.5), lubrication (3.3 +/- 2.6), orgasm (2.6 +/- 2.3), satisfaction (4 +/- 1.7), and pain/dyspareunia (3.2 +/- 2.6). The mean total FSFI score was 20.1 +/- 12.4 (median 24.7). In this series, the prevalence of female sexual dysfunction (FSFI score </=26.55) was 55.7%, with women presenting difficulties across all domains of female sexual function but mostly in the dyspareunia and lubrication domains. Logistic regression analysis determined that female age (odds ratio (OR) 3.3, 95% confidence interval (CI) 1.6-6.8), p = 0.001), postmenopausal status (OR 2.8, 95% CI 1.3-6.1, p = 0.007), partner's age (OR 2.0, 95% CI 1-4, p = 0.03), educational level (OR 2.7, 95% CI 1.5-5, p = 0.001), and the presence of erectile dysfunction (OR 3.8, 95% CI 1.3-10.9, p = 0.01) and premature ejaculation (OR 4.1, 95% CI 1.4-11.7, p = 0.0001) significantly increased the risk for female sexual dysfunction. Partner faithfulness (OR 0.2, 95% CI 0.1-0.4, p = 0.001) and menopausal HT use (OR 0.4, 95% CI 0.1-1, p = 0.04) decreased this risk. Conclusions In this series, male sexual health and demographic profile and female HT use were relevant determinants for sexual functioning among middle-aged women.

Longitudinal changes in sexual functioning as women transition through menopause: results from the Study of Women's Health Across the Nation.
Avis NE, Brockwell S, Randolph JF Jr, Shen S, Cain VS, Ory M, Greendale GA
Menopause. 2009 Feb 10. [Epub ahead of print]

OBJECTIVE: Sexual functioning is an important component of women's lives. The extent to which the menopausal transition is associated with decreased sexual functioning remains inconclusive. This study seeks to determine if advancing through the menopausal transition is associated with changes in sexual functioning. METHODS: This was a prospective, longitudinal cohort study of women aged 42 to 52 years at baseline recruited at seven US sites (N = 3,302) in the Study of Women's Health Across the Nation (SWAN). Cohort-eligible women had an intact uterus, had at least one ovary, were not currently using exogenous hormones, were either premenopausal or early perimenopausal, and self-identified as one of the study's designated racial/ethnic groups. Data from the baseline interview and six annual follow-up visits are reported. Outcomes are self-reported ratings of importance of sex; frequency of sexual desire, arousal, masturbation, sexual intercourse, and pain during intercourse; and degree of emotional satisfaction and physical pleasure. RESULTS: With adjustment for baseline age, chronological aging, and relevant social, health, and psychological parameters, the odds of reporting vaginal or pelvic pain increased and desire decreased by late perimenopause. Masturbation increased at early perimenopause but declined during postmenopause. The menopausal transition was unrelated to other outcomes. Health,

psychological functioning, and importance of sex were related to all sexual function outcomes. Age, race/ethnicity, marital status, change in relationship, and vaginal dryness were also associated with sexual functioning. CONCLUSIONS: Pain during sexual intercourse increases and sexual desire decreases over the menopausal transition. Masturbation increases during the early transition, but then declines in postmenopause. With adjustment for other factors, the menopausal transition was not independently associated with reports of the importance of sex, sexual arousal, frequency of sexual intercourse, emotional satisfaction with partner, or physical pleasure.

Self-management, amitriptyline, and amitripyline plus triamcinolone in the management of vulvodynia.
Brown CS, Wan J, Bachmann G, Rosen R
J Womens Health (Larchmt). 2009 Feb;18(2):163-9.

OBJECTIVE: To conduct a prospective study to determine the efficacy of self-management interventions, amitriptyline, and amitriptyline plus topical triamcinolone in reducing vulvar pain in women with vulvodynia. METHODS: This was a randomized, prospective study of 53 women between the ages of 18 and 72 with vulvodynia. Participants undertook one of three treatment interventions for a period of 12 weeks: self-management, oral amitriptyline (10-20 mg/day), or topical triamcinolone plus oral amitriptyline (10-20 mg/day). The McGill Pain Questionnaire (MPQ) was used to measure changes in qualitative pain using the pain rating index (PRI) and in quantitative pain using the present pain intensity (PPI) scale. RESULTS: Of the 53 randomized subjects, 43 completed the trial. There were no statistically significant differences in PRI or PPI scores among the three treatment groups. Significant within-group differences were observed in the self-management group on the PRI and in the amitriptyline group on the PPI. CONCLUSIONS: This first randomized, prospective trial suggests that self-management has a modest effect and that low-dose amitriptyline (with and without topical triamcinolone) is not effective in reducing pain in women with vulvodynia.

Differential diagnosis of seizure associated with topical lidocaine in a patient with vestibulodynia.
Brown C, Bachmann G, Ling FW
J Low Genit Tract Dis. 2009 Jan;13(1):51.

No abstract available.

Eastern approaches for enhancing women's sexuality: mindfulness, acupuncture, and yoga (CME).
Brotto LA, Krychman M, Jacobson P
J Sex Med. 2008 Dec;5(12):2741-8; quiz 2749.

INTRODUCTION: A significant proportion of women report unsatisfying sexual experiences despite no obvious difficulties in the traditional components of sexual response (desire, arousal, and orgasm). Some suggest that nongoal-oriented spiritual elements to sexuality might fill the gap that more contemporary forms of treatment are not addressing. AIM: Eastern techniques including mindfulness, acupuncture, and yoga, are Eastern techniques, which have been applied to women's sexuality. Here, we review the literature on their efficacy. METHODS: Our search revealed two empirical studies of mindfulness, two of acupuncture, and one of yoga in the treatment of sexual dysfunction. MAIN OUTCOME MEASURE: Literature review of empirical sources. RESULTS: Mindfulness significantly improves several aspects of sexual response and reduces sexual distress in women with sexual desire and arousal disorders. In women with provoked vestibulodynia, acupuncture significantly reduces pain and improves quality of life. There is also a case series of acupuncture significantly improving desire among women with hypoactive sexual desire disorder. Although yoga has only been empirically examined and found to be effective for treating sexual dysfunction (premature ejaculation) in men, numerous historical books cite benefits of yoga for women's sexuality. CONCLUSIONS: The empirical literature supporting Eastern techniques, such as mindfulness, acupuncture, and yoga, for women's sexual complaints and loss of satisfaction is

sparse but promising. Future research should aim to empirically support Eastern techniques in women's sexuality.

The use of botulinum toxin in the pelvic floor for women with chronic pelvic pain – and new answer to old problem?
Abbott J, Med Hons B
J Minim Invasive Gynecol. 2009 Jan 21. [Epub ahead of print]

Chronic pelvic pain occurs in about 15% of women and has a variety of causes requiring accurate diagnosis and appropriate treatment if pain reduction is to be effected. Superficial conditions such as provoked vestibulodynia and deeper pelvic issues such as pelvic floor myalgia were traditionally difficult to diagnose and adequately treat. For provoked vestibulodynia, there are limited data, in the form of case reports and small series, to indicate that botulinum toxin (BoNT) injections may provide short-term (3-6 months) benefit. Retreatment is reported to be successful and side effects are few. Class-I studies are essential to adequately assess this form of treatment. For pelvic floor myalgia, 1 class-I study and 3 class-II to -III studies indicate efficacy of BoNT. In the only double-blind, randomized, controlled study, significant reduction in pelvic floor pressures with significant pain reduction for some types of pelvic pain are reported compared with baseline. No differences in pain occurred compared with the control group who had physical therapy as an intervention. Physical therapy should be used as a noninvasive first-line treatment, with BoNT injections reserved for those who are refractory to treatment. Pelvic floor disorders should be considered as a cause for chronic pelvic pain in women and an attempt made to diagnose and treat such problems as a routine practice. The use of BoNT as a therapeutic option for pelvic floor muscle spasm and pain is still in its infancy. Initial reports suggest that there may be a significant role for women with chronic pain that is refractory to currently available medical and surgical treatments, however, there are very few high-quality studies and research is essential before this novel treatment can be accepted into widespread use for pelvic pain attributable to the pelvic floor.

Exploring a novel therapeutic approach with noninvasive cortical stimulation for vulvodynia.
Cecilio SB, Zaghi S, Cecilio LB, Correa CF, Fregni F
Am J Obstet Gynecol. 2008 Dec;199(6):e6-7.

Existing therapies for vulvodynia are inadequate. Because vulvodynia has a pathophysiology similar to chronic pain, central nervous system dysfunction may underlie this painful disorder, and noninvasive methods of neuromodulation may prove highly effective. We report a case of severe, medically refractory vulvodynia that responded remarkably to treatment with transcranial direct current stimulation.

Gene therapy for pain.
Jain KK
Expert Opin Biol Ther.2008 Dec;8(12):1855-66.

BACKGROUND: Management of chronic pain remains a challenge in spite of the numerous drugs either approved or still in development. Apart from inadequacy of relief, there are concerns about adverse effects and addiction in the case of drugs such as opioids. Gene therapy is being investigated for improving management of pain. OBJECTIVE: To addresses the rationale of gene therapy for treatment of pain and its advantages over drugs. The prospects of translation of these techniques from experimental animals to clinical use are discussed. METHODS: The review is based on the available literature and is confined to experimental work, as there are no approved therapies in this category. RESULTS/CONCLUSION: A number of promising gene therapies as well as antisense- and RNA interference-based approaches have been identified. These provide targeted approaches to delivery of antinociceptive molecules or interruption of pain pathways without subjecting the patient to systemic toxicity of drugs. Some of these approaches are aimed at correcting the underlying pathology of the diseases (e.g., treating degenerative joint diseases causing pain). Management of neuropathic pain is a

challenge and a number of studies are addressing it. Overall the future of gene therapy for pain is promising.

Cell therapy for pain.
Jain KK
Expert Opin Biol Ther. 2008 Dec;8(12):1847-53.

BACKGROUND: Management of chronic pain remains a challenge in spite of numerous drugs that are either approved or still in development. Apart from inadequate relief, there are concerns about adverse effects and addiction. Cell therapy is being explored for relief of pain. OBJECTIVE: To address the rationale for cell therapy for treatment of pain and its advantages over conventional pharmaceuticals. The prospects of translation of these techniques from experimental animals to clinical use are discussed. METHODS: This review is based on the literature on cell therapy in relation to pain and is confined to experimental work as there are no approved therapies in this category. RESULTS/CONCLUSIONS: A number of promising cell therapy technologies have been identified. These provide targeted approaches to delivery of antinociceptive molecules, avoiding subjecting the patient to systemic toxicity of drugs. There has been considerable progress in treating degenerative joint diseases causing pain. Management of neuropathic pain is a challenge and a number of ongoing studies are addressing it. Overall the future of cell therapy for pain is promising.

Central nervous system abnormalities in vaginismus.
Frasson E, Graziottin A, Priori A, Dall'ora E, Didone G, Garbin EL, Vicentini S, Bertolasi L
Clin Neurophysiol. 2009 Jan;120(1):117-22.

OBJECTIVE: To investigate possible altered CNS excitability in vaginismus. METHODS: In 10 patients with primary idiopathic lifelong vaginismus, 10 with vulvar vestibulitis syndrome accompanied by vaginismus and healthy controls we recorded EMG activity from the levator ani (LA) and external anal sphincter (EAS) muscles and tested bulbocavernosus reflex (BCR). Pudendal-nerve somatosensory evoked potentials (SEPs) were tested after a single stimulus. Pudendal-nerve SEP recovery functions were assessed using a paired conditioning-test paradigm at interstimulus intervals (ISIs) of 5, 20 and 40ms. RESULTS: EMG in patients showed muscular hyperactivity at rest and reduced inhibition during straining. The BCR polysynaptic R2 had larger amplitude ($p<0.01$) and longer duration ($p<0.01$) in patients from both groups than in controls. In controls, paired-pulse SEPs were suppressed at the 5ms ISI for N35-P40 ($p<0.05$) and P40-N50 ms ($p<0.001$) and facilitated at the 20ms ISI for N35-P40 ($p<0.05$) and P40-N50 ($p<0.05$). No significant differences were found in the paired-pulse N35-P40 in patients and controls but the cortical P40-N50 at 20 ISI was facilitated in patients ($p<0.05$). CONCLUSIONS: EMG activity is enhanced and the cortical SEP recovery cycle and BCR are hyperexcitable in vaginismus. SIGNIFICANCE: The neurophysiological abnormalities in patients with vaginismus indicate concomitant CNS changes in this disorder.

Evaluation of diagnostic accuracy of colour duplex scanning, compared to electroneuromyography, diagnostic score and surgical outcomes, in pudendal neuralgia by entrapment: a prospective study on 96 patients.
Mollo M, Bautrant E, Rossi-Seignert AK, Collet S, Boyer R, Thiers-Bautrant D
Pain. 2009 Mar;142(1-2):159-63.

The objective of our study is to evaluate the detection capacity of Colour Duplex Scanning (CDS) in helping to diagnose Pudendal Neuralgia (PNa) by Pudendal Nerve Entrapment (PNE). This technique is being compared to complete Neurological Criteria (NC) based on Diagnostic Score (DS) and Electroneuromyography (ENMG) and secondly, to the results of surgery. This is a prospective study, on a consecutive series of 96 unselected patients evaluated by both CDS and NC. The CDS examinations were performed by the same operator who was unaware of the NC. The DS and the ENMG were read by a practitioner who was unaware of the CDS findings. The Peak Systolic Velocity (PSV) and the Systolic

Ascension Time (AT) were the vascular criteria. Inadequate examinations were neither repeated nor removed from the analysis. Of 166 Internal Pudendal Arteries (IPAs) explored by CDS, 163 were visualised on their whole course, leading to a 98% feasibility. Of the 67 PNE identified by NC, 60 cases of Pudendal Vascular Entrapment (PVE) were detected by CDS, leading to a 89.6% sensitivity and a 67.4% specificity. Currently, there is no gold standard that can diagnose PNa by PNE with certainty. CDS is a non-invasive technique, demonstrating high diagnostic value to confirm PNE. In this study, we determined a new objective diagnostic criterion, the Pudendal Artery Ratio (PAR), which is very strong at diagnosing PNE but needs to be validated by further studies.

Central mechanisms of experimental and chronic neuropathic pain: findings from functional imaging studies.
Seifert F, Maihofner C
Cell Mol Life Sci. 2009 Feb;66(3):375-90.

Over the last few years remarkable efforts have been made using functional imaging studies to unravel brain processing of pain and decipher underlying neuronal mechanisms. Cerebral processing in experimental pain models, especially those provoking hyperalgesia, and its pharmacological modulation will form the first part of this review. In a second part we will address central mechanisms of clinical neuropathic pain. Up to now, there are at least six main mechanisms involved in the chronification of neuropathic pain: (i) activity increase in areas of the pain neuromatrix, (ii) recruitment of additional cortical areas beyond the classical pain neuromatrix, (iii) cortical reorganization and maladaptive neuroplasticity, (iv) alterations in neurochemistry (v) structural brain changes and (vi) disruption of the brain default mode network. In a third part of this review we discuss mechanisms of endogenous pain modulation.

Genito-sensory analysis in women with arousal and orgasmic dysfunction.
Helpman L, Greenstein A, Hartoov J, Abramov L
J Sex Med. 2009 Feb 4. [Epub ahead of print]

Introduction. Diagnosis and treatment of female sexual dysfunction (FSD) are currently based on subjective female reports and physical examination. The GenitoSensory Analyzer (GSA) is a quantitative sensory testing tool designed to quantify vibratory and thermal sensation in the vagina and clitoris in a reproducible manner, and may therefore contribute to the diagnosis and management of FSD. Aim. To address the question of whether women with arousal and/or orgasmic sexual disorders have genital sensory abnormalities as measured by the GSA. Main Outcome Measures. Thresholds for warm, cold, and vibratory sensation at predetermined points in the vaginal wall and clitoris. Methods. Female subjects complaining of arousal and/or orgasmic sexual disorders for more than 6 months were evaluated using a questionnaire based on the female sexual function index (FSFI). Women with a desire disorder, pain disorder, vulvar vestibulitis syndrome, or acute vaginal or/and introital infection were excluded. The GSA device measured thresholds for warm, cold, and vibratory sensation at predetermined points in the vaginal wall and clitoris. Eight measurements were obtained, and deviations from previously published normative values were identified. Results. Twenty-eight women (age 40.4 +/- 13 years) complaining of arousal and/or orgasmic FSD comprised the study cohort. Twenty-five of them (89%) had at least one pathologic genitor-sensory threshold on GSA testing and 19 (68%) had >3 pathologic thresholds. Pathologic GSA results were associated with lower arousal scores on the FSFI questionnaire, older age, and menopausal status. Conclusions. Most of the study women had at least one genitor-sensory pathology on GSA testing, indicating a possible organic component in their disorder. Our findings support the incorporation of the GSA as a quantitative tool in the assessment and diagnosis of patients with FSD.

HPV infection in women: Psychosexual impact of genital warts and intraepithelial lesions.
Graziottin A, Serafini A
J Sex Med.2009 Jan 13. [Epub ahead of print]

Introduction. Genital Human Papillomavirus (HPV) infection is the most commonly occurring sexually transmitted viral infection in humans. HPV is a wide family of DNA viruses, which may cause benign skin and mucosal tumors (genital, anal, or oral warts), intraepithelial neoplasias, and/or malignant cancers in different organs. Women are more susceptible to the oncogenic effect of HPVs, mostly at the genital site on the uterine cervix. Aims. This review analyzes the impact of: (i) genital warts (GWs) and their treatment; (ii) HPV-related genital, oral, and anal precancerous lesions on women's sexual function. Methods. A Medline search was carried out. Search terms were HPV, GWs, intraepithelial neoplasia, cervical cancer, anal cancer, oral cancer, epidemiology, HPV risk factors, sexual dysfunctions, desire disorders, arousal disorders, dyspareunia, vulvar vestibulitis, vulvodynia, orgasmic difficulties, sexual repertoire, couple sexual problems, depression, anxiety, pap smear, screening program, therapy, and vaccines. Main Outcome Measures. Sexual consequences of HPV infection in women, specifically GWs and intraepithelial HPV-related neoplasia. Results. Psychosexual vulnerability increases with number of recurrences of HPV infections. Depression, anxiety, and anger are the emotions most frequently reported. However, to date, there is no conclusive evidence of a specific correlation between HPV infection and a specific female sexual disorder. The relationship between HPV and vulvar vestibulitis/vulvodynia-related dyspareunia seems not to be direct. Counseling problems, the role of anti-HPV vaccine, and the concept of the high-risk partner are discussed. The reader is offered a practical approach with clinically relevant recommendations that may prove useful in his/her daily practice when dealing with HPV-infected women and couples. Conclusion. The evidence of psychosexual consequences of HPV-related GWs and intraepithelial lesions is limited. Specific research on the sexual impact of GWs and intraepithelial HPV-related lesion in women is urgently needed.

Vulvodynia: a comprehensive review.
Kingdon J
Nurs Womens Health. 2009 Feb;13(1):48-57; quiz 58.

No abstract available.

Understanding women's sexual health: a case-based approach.
Marnach ML, Casey PM
Mayo Clin Proc. 2008 Dec;83(12):1382-6; quiz 1387.

Female sexual dysfunction is complex and its management challenging. In this review, we discuss female sexual response and the definitions of female sexual disorders. Evidence-based strategies for the evaluation and multidisciplinary treatment of female sexual dysfunction are presented in a case-oriented manner applicable to everyday clinical practice.

Misremembering pain: Memory bias for pain words in women reporting sexual pain.
Thaler L, Meana M, Lanti A
J Sex Med. 2009 Feb 6. [Epub ahead of print]

ABSTRACT Introduction. The debate over the classification of dyspareunia as a sexual dysfunction or as a pain disorder raises the question of the comparative cognitive salience of sex and/or pain in the experience of women who report pain with intercourse. Refinements in our understanding of cognitive factors in the experience of pain with intercourse may be important in the development of effective treatments. Aim. This study aimed to compare the cognitive salience of sex and pain word stimuli in women reporting pain with intercourse and in a control group of women without sexual dysfunction. Methods. Twenty women reporting pain during sexual intercourse and 20 women reporting no sexual dysfunction (controls) participated in a memory protocol designed to detect differences as a function of group membership and type of stimulus (sex, pain, and two other control stimuli). Main Outcome Measures. Dependent measures were recall, recognition, intrusions, and false positives for sex words, pain words, and two other control word types. Results. Regardless of group membership, women had best recall for sex-related words; however, women reporting sexual pain evidenced more false memories

for pain words than did control women, and pain words elicited more false memories than any other type of word for women with sexual pain. Conclusion. Results are interpreted to suggest that repeated activation through experience with persistent sexual pain may have contributed to the: (i) development of stronger semantic networks related to pain in comparison to no sexual dysfunction controls and; (ii) activation of pain networks more easily triggered by pain-related stimuli in women with sexual pain than in no sexual dysfunction controls. Sex, however, had not attained the cognitive salience of pain.

Cognitive-affective correlates and predictors of superficial dyspareunia.
Brauer M, ter Kuile MM, Laan E, Trimbos B
J Sex Marital Ther. 2009;35(1):1-24.

This study investigated the role of cognitive-affective variables related to sexuality, chronic pain, individual and relational well-being in superficial dyspareunia. Although symptomatic women (n = 80) differed from complaint-free controls (n = 62) on all variables, sexuality related measures had the most important contribution into the prediction of group membership. Dyspareunia subgroups based on the presence/absence of a concomitant diagnosis of provoked vestibulodynia were only distinguishable on pain intensity but not on variables related to sexuality and psychological well-being. The present findings underscore the relevance of psychosexual factors in women with superficial dyspareunia.

Other Vulvovaginal Disorders

Choosing topical corticosteroids.
Ference JD, Last AR
Am Fam Physician. 2009 Jan 15;79(2):135-40.

Topical corticosteroids are one of the oldest and most useful treatments for dermatologic conditions. There are many topical steroids available, and they differ in potency and formulation. Successful treatment depends on an accurate diagnosis and consideration of the steroid's delivery vehicle, potency, frequency of application, duration of treatment, and side effects. Although use of topical steroids is common, evidence of effectiveness exists only for select conditions, such as psoriasis, vitiligo, eczema, atopic dermatitis, phimosis, acute radiation dermatitis, and lichen sclerosus. Evidence is limited for use in melasma, chronic idiopathic urticaria, and alopecia areata.

Improved treatment of vulvovaginal candidiasis with fluconazole plus probiotic Lactobacillus rhamnosus GR-1 and Lactobacillus reuteri RC-14.
Martinez RC, Franceschini SA, Patta MC, Quintana SM, Candido RC, Ferreira JC, De Martinis EC, Reid G
Lett Appl Microbiol. 2009 Mar;48(3):269-74.

AIMS: To determine the ability of probiotic lactobacilli to improve the treatment of vulvovaginal candidiasis (VVC) using a randomized, double-blind and placebo-controlled trial. METHODS AND RESULTS: Fifty-five women diagnosed with VVC by vaginal discharge positive for Candida spp. (according to culture method) associated with at least one of the symptoms (itching and burning vaginal feeling, dyspareunia and dysuria), were treated with single dose of fluconazole (150 mg) supplemented every morning for the following 4 weeks with two placebo or two probiotic capsules (containing Lactobacillus rhamnosus GR-1 and Lactobacillus reuteri RC-14). At 4 weeks, the probiotic treated group showed significantly less vaginal discharge associated with any of the above mentioned symptoms (10.3%vs 34.6%; P = 0.03) and lower presence of yeast detected by culture (10.3%vs 38.5%; P = 0.014). CONCLUSION: This study has shown that probiotic lactobacilli can increase the effectiveness of an anti-fungal pharmaceutical agent in curing disease. SIGNIFICANCE AND IMPACT OF THE STUDY: This novel finding of probiotic lactobacilli augmenting the cure rate of yeast vaginitis, not only offers an alternative approach to a highly prevalent

condition that adversely affects the quality of life of women around the world, but also raises the question of how this combination works.

Accuracy of the clinical diagnosis of vaginitis compared with a DNA probe laboratory standard.
Lowe NK, Neal JL, Ryan-Wenger NA
Obstet Gynecol. 2009 Jan;113(1):89-95.

OBJECTIVE: To estimate the accuracy of the clinical diagnosis of the three most common causes of acute vulvovaginal symptoms (bacterial vaginosis, candidiasis vaginitis, and trichomoniasis vaginalis) using a traditional, standardized clinical diagnostic protocol compared with a DNA probe laboratory standard. METHODS: This prospective clinical comparative study had a sample of 535 active-duty United States military women presenting with vulvovaginal symptoms. Clinical diagnoses were made by research staff using a standardized protocol of history, physical examination including pelvic examination, determination of vaginal pH, vaginal fluid amines test, and wet-prep microscopy. Vaginal fluid samples were obtained for DNA analysis. The research clinicians were blinded to the DNA results. RESULTS: The participants described a presenting symptom of abnormal discharge (50%), itching/irritation (33%), malodor (10%), burning (4%), or others such as vulvar pain and vaginal discomfort. According to laboratory standard, there were 225 cases (42%) of bacterial vaginosis, 76 cases (14%) of candidiasis vaginitis, 8 cases (1.5%) of trichomoniasis vaginalis, 87 cases of mixed infections (16%), and 139 negative cases (26%). For each single infection, the clinical diagnosis had a sensitivity and specificity of 80.8% and 70.0% for bacterial vaginosis, 83.8% and 84.8% for candidiasis vaginitis, and 84.6% and 99.6% for trichomoniasis vaginalis when compared with the DNA probe standard. CONCLUSION: Compared with a DNA probe standard, clinical diagnosis is 81-85% sensitive and 70-99% specific for bacterial vaginosis, Candida vaginitis, and trichomoniasis. Even under research conditions that provided clinicians with sufficient time and materials to conduct a thorough and standardized clinical evaluation, the diagnosis and, therefore, subsequent treatment of these common vaginal problems remains difficult. LEVEL OF EVIDENCE: II.

Development and in vitro evaluation of an acid buffering bioadhesive vaginal gel for mixed vaginal infections.
Ahmad FJ, Alam MA, Khan ZI, Khar RK, Ali M
Acta Pharm. 2008 Dec;58(4):407-19.

An acid buffering bioadhesive vaginal (ABBV) gel was developed for the treatment of mixed vaginal infections. Different bioadhesive polymers were evaluated on the basis of their bioadhesive strength, stability and drug release properties. Bioadhesion and release studies showed that guar gum, xanthan gum and hydroxypropyl methylcelullose K4M formed a good combination of bioadhesive polymers to develop the ABBV gel. Monosodium citrate was used as an acid buffering agent to provide acidic pH (4.4). The drugs clotrimazole (antifungal) and metronidazole (antiprotozoal as well as antibacterial) were used in the formulation along with Lactobacillus spores to treat mixed vaginal infections. The ex vivo retention study showed that the bioadhesive polymers hold the gel for 12-13 hours inside the vaginal tube. Results of the in vitro antimicrobial study indicated that the ABBV gel had better antimicrobial action than the commercial intravaginal drug delivery systems and retention was prolonged in an ex vivo retention experiment.

In vitro effects of glycyrrhetinic acid on the growth of clinical isolates of Candida albicans.
Pellati D, Fiore C, Armanini D, Rassu M, Bertoloni G
Phytother Res. 2008 Dec 9. [Epub ahead of print]

Compounds derived from Glycyrrhiza glabra L. root have been used widely for centuries for their numerous therapeutic properties. The present study aimed to test the in vitro activity against Candida albicans strains of the compound 18-beta glycyrrhetinic acid (18-beta GA), derived from the root of Glycyrrhiza species. This antimicrobial activity was assessed using the National Committee for Clinical

Laboratory Standards (NCCLS) method on C. albicans strains that were isolated from patients with recurrent vulvovaginal candidiasis (RVVC). The in vitro growth of the C. albicans strains was markedly reduced, in a pH-dependent manner, by relatively low doses (6.2 microg/mL) of 18-beta GA. The results demonstrate that 18-beta GA is a promising biological alternative for the topical treatment of recurrent vulvovaginal candidiasis (RVVC).

Antifungal mechanisms supporting boric acid therapy of Candida vaginitis.
De Seta F, Schmidt M, Vu B, Essmann M, Larsen B
J Antimicrob Chemother. 2009 Feb;63(2):325-36.

BACKGROUND: Boric acid is a commonly cited treatment for recurrent and resistant yeast vaginitis, but data about the extent and mechanism of its antifungal activity are lacking. OBJECTIVES: The aim of this study was to use in vitro methods to understand the spectrum and mechanism of boric acid as a potential treatment for vaginal infection. METHODS: Yeast and bacterial isolates were tested by agar dilution to determine the intrinsic antimicrobial activity of boric acid. Established microbial physiology methods illuminated the mechanism of the action of boric acid against Candida albicans. RESULTS: C. albicans strains (including fluconazole-resistant strains) were inhibited at concentrations attainable intravaginally; as were bacteria. Broth dilution MICs were between 1563 and 6250 mg/L and boric acid proved fungistatic (also reflected by a decrease in CO(2) generation); prolonged culture at 50,000 mg/L was fungicidal. Several organic acids in yeast nitrogen broth yielded a lower pH than equimolar boric acid and sodium borate but were less inhibitory. Cold or anaerobic incubation protected yeast at high boric acid concentrations. Cells maintained integrity for 6 h in boric acid at 37 degrees C, but after 24 h modest intrusion of propidium iodide occurred; loss of plate count viability preceded uptake of vital stain. Growth at sub-MIC concentrations of boric acid decreased cellular ergosterol. The drug efflux pump CDR1 did not protect Candida as CDR1 expression was abrogated by boric acid. Boric acid interfered with the development of biofilm and hyphal transformation. CONCLUSIONS: Boric acid is fungistatic to fungicidal depending on concentration and temperature. Inhibition of oxidative metabolism appears to be a key antifungal mechanism, but inhibition of virulence probably contributes to therapeutic efficacy in vivo.

Basic Science

Anatomical basis of transgluteal pudendal nerve block.
Prat-Pradal D, Metge L, Gagnard-Landra C, Mares P, Dauzat M, Godlewski G
Surg Radiol Anat. 2008 Dec 19. [Epub ahead of print]

BACKGROUND: The pudendal nerve may become entrapped either within the pudendal canal or near the sacrotuberous ligament resulting in a partial conduction block. The goal of the present anatomical study was to assess a new transgluteal injection technique in terms of the precise injection site and the resulting distribution of the injected agent. MATERIALS AND METHODS: This study was carried out using eight fresh human cadavers. An epidural needle with a removable wing was inserted and the catheter position visualized using MRI. Through the catheter 10 ml of gadolinium contrast medium was injected into three of the cadavers. A further four cadavers were injected with latex and blue pigment and the pelvi-perineal area of each then separated from the trunk for freezing before being cut into 4-8 mm thick sections with an electric bandsaw. One final cadaver was injected with a mix of gadolinium (5 ml) and latex (5 ml) and both the MRI and anatomical procedures outlined above were performed. RESULTS: Using MRI, we clearly imaged both the site of injection, near the trunk of the pudendal nerve, and the gadolinium contrast medium in different pelvic and perineal areas and around the fascia of the obturator internus and levator ani muscle. Concerning the anatomical study, latex was observed mainly around the sacrotuberous ligament, along the obturator internus muscle and in the perineal area in contact with the dividing branches of the pudendal nerve. The mixed injection of latex and gadolinium in the pudendal canal was found with the same localization between MRI and anatomical studies. CONCLUSION: This

easily performed technique should provide a new approach for treating perineal neuralgia via pudendal nerve block in the consultation room without the need for computed tomography.

TRPV1 receptors in sensitisation of cough and pain reflexes.
Adcock JJ
Pulm Pharmacol Ther. 2008 Dec 27. [Epub ahead of print]

Preclinical studies suggest that the vanilloid receptor (TRPV1) is an important component of several disease areas such as pain (inflammatory, visceral, cancer and neuropathic), airway disease (including chronic cough), inflammatory bowel disease (IBD), interstitial cystitis, urinary incontinence, pancreatitis and migraine. TRPV1 is a member of a distinct subgroup of the transient receptor potential (TRP) family of ion channels. The neuronally expressed TRPV1 is a non-selective, Ca(2+)-preferring, cation channel. In addition to capsaicin, this channel is activated by a number of different stimuli including heat, acid, certain arachidonic acid derivatives and direct phosphorylation via protein kinase C (PKC). Moreover, there is also evidence that various inflammatory mediators such as adenosine triphosphate (ATP), bradykinin, nerve growth factor (NGF) or prostaglandin E(2) (PGE(2)) may indirectly lead to activation of the TRPV1 channel via activation of their respective receptors. There is strong experimental evidence that the combination of direct and indirect mechanisms finely tune the TRPV1 activity. Each of the different known modes of direct TRPV1 activation (protons, heat and vanilloids) is capable of sensitising the channel to other agonists. Similarly, inflammatory mediators from the external milieu found in disease conditions can indirectly sensitise the receptor. It is this sensitisation of the TRPV1 receptor in inflammatory disease that could hold the key and contribute to the transduction of noxious signalling for normally innocuous stimuli, i.e. either hyperalgesia in the case of chronic pain or airway hyperresponsivness/hypertussive responses in patients with chronic cough. It seems reasonable to suggest that the various mechanisms for sensitisation provide a scenario for TRPV1 to be tonically active and this activity may contribute to the underlying pathology - providing an important convergence point of multiple pain producing stimuli in the somatosensory system and multiple cough-evoking irritants in the airways. The complex mechanisms and pathways that contribute to the pathophysiology of chronic pain and chronic cough have made it difficult for clinicians to treat patients with current therapies. There is an increasing amount of evidence supporting the hypothesis that the expression, activation and modulation of TRPV1 in sensory neurones appears to be an integral component of pain and cough pathways, although the precise contribution of TRPV1 to human disease has yet to be determined. So the question remains open as to whether TRPV1 therapeutics will be efficacious and safe in man and represent a much needed novel pain and cough therapeutic.