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This newsletter is quarterly and contains abstracts from medical journals published between March and June 2010. Abstracts presented at scientific meetings may also be included. Please direct any comments regarding this newsletter to chris@nva.org.

Vulvodynia / Vulvovaginal Pain

Histologic and receptor analysis of primary and secondary vestibulodynia and controls: a prospective study.
Goetsch MF, Morgan TK, Korcheva VB, Li H, Peters D, Leclair CM.
Am J Obstet Gynecol. 2010 Jun;202(6):614.e1-8.

OBJECTIVE: The objective of the study was to assess the association between hormone receptor densities, pain nerves, and inflammation in vestibulodynia patients. STUDY DESIGN: In a prospective study, tender and nontender biopsies from 10 primary and 10 secondary vestibulodynia patients were compared with biopsies in 4 nontender controls. Hormone receptors were evaluated using immunohistochemistry for estrogen receptor-alpha and -beta, androgen, and progesterone receptors. Inflammation, nerves, and mast cells were assessed histologically. Statistical analysis was by Fisher's exact test, analysis of variance, paired Student t test, and Wilcoxon rank test. RESULTS: Tender sites from primary vestibulodynia had increased nerve density compared with secondary and control biopsies ($P = .01$). Tender sites in secondary vestibulodynia had more lymphocytes than tender primary sites and control biopsies ($P < .0001$). Mast cells were increased in tender sites compared with nontender and controls. There were no differences in hormone receptor expression. CONCLUSION: Markers of inflammation differed between primary and secondary vestibulodynia and controls.

Topical nifedipine for the treatment of localized provoked vulvodynia: a placebo-controlled study.
Bornstein J, Tuma R, Farajun Y, Azran A, Zarfati D.
J Pain. 2010 May 25. [Epub ahead of print]

Topical application of the calcium antagonist nifedipine has demonstrated effectiveness in treating chronic anal fissure, without adverse effects. Like chronic anal fissure, vulvodynia is associated with muscle hypertonicity and an inflammatory infiltrate. We conducted a double-blind placebo-controlled study to investigate the effectiveness of 2 concentrations of topical nifedipine cream in the treatment of vulvodynia. Thirty participants were alternately assigned to 3 topical treatment groups: .2% nifedipine, .4% nifedipine, and placebo. All administered the cream to the vestibule 4 times daily for 6 weeks. For all 3 treatment groups, mean pain intensity on vestibular touch, assessed by the Q-tipped cotton test, pain from speculum insertion, and reports of pain during sexual intercourse was reduced at post-treatment compared with pre-treatment. These improvements remained at 3 months' follow-up. The effectiveness of nifedipine in treating vulvodynia did not exceed that of placebo. PERSPECTIVE: The topical application of both nifedipine and a placebo reduced pain in women with vulvodynia. This study highlights the need for

controlled trials of treatments for vulvodynia and raises doubts about studies conducted without comparison to placebo.

Guidelines for the management of vulvodynia.
Mandal D, Nunns D, Byrne M, McLelland J, Rani R, Cullimore J, Bansal D, Brackenbury F, Kirtschig G, Wier M; British Society for the Study of Vulval Disease (BSSVD) Guideline Group.
Br J Dermatol. 2010 Mar 16. [Epub ahead of print]

Summary These guidelines for the management of vulvodynia have been prepared by the British Society for the Study of Vulval Diseases Guideline Group. They present evidence-based guidance for treatment, with identification of the strength of evidence available at the time of preparation of the guidelines

Onset of vulvodynia in a woman ultimately diagnosed with Creutzfeldt-Jakob disease.
Reichman O, Tselis A, Kupsky WJ, Sobel JD.
Obstet Gynecol. 2010 Feb;115(2 Pt 2):423-5.

BACKGROUND: Vulvodynia, defined as vulvar pain or burning in the presence of normal vulvar appearance, is common and is associated with chronic pain syndromes and psychiatric disorders. CASE: A postmenopausal woman complained of vulvar burning. Causes for vulvar burning including yeast infection, estrogen deficiency, and contact dermatitis were excluded. Vulvovaginal examination was normal. Subsequently, she complained of headaches, insomnia, and depression. She developed ataxic gait with rapidly progressive dementia. Brain biopsy confirmed the diagnosis of Creutzfeldt-Jakob disease, and 3 weeks later she lapsed into coma and died. CONCLUSION: This report is unique in that a rare disease, known to result in neuronal damage, mimicked symptoms of vulvodynia in its initial phase. This supports the hypothesis that vulvodynia is a neuropathic syndrome originating in the nervous system.

Diagnosis and management of vulvodynia should include biopsy and histological examination.
Regauer S, Eberz B.
Br J Dermatol. 2010 Jun 14. [Epub ahead of print]

No abstract available.

Junior doctors' understanding of vulval pain/Vulvodynia: a qualitative survey.
Toeima E, Nieto J.
Arch Gynecol Obstet. 2010 May 22. [Epub ahead of print]

AIM: The objective of this survey is to explore junior doctors' understanding of vulvodynia using a questionnaire. METHOD: Fifty-six copies of the questionnaire were handed out at three hospitals: Norfolk and Norwich University Hospital, Colchester University Hospital, and Royal Free Hospital in London. The questionnaire was anonymous, containing 11 questions asking about different aspects of diagnosis and management of vulvodynia. The doctors were asked to write their post or level of Obstetrics and Gynaecology speciality training e.g. ST1, ST2, ST3, etc. RESULTS: The results highlight the limited amount of awareness and understanding of vulval pain among junior doctors. CONCLUSION: There is little understanding about vulvodynia among junior gynaecologists. Most of them did not have any form of basic training about the condition even after reaching the final stages of the speciality training. In view of the estimated prevalence, there is a need for including some form of local and/or regional teaching about the causes and management of vulvar pain, particularly for those who are about to finish their speciality training.

Improving medical student knowledge of female pelvic floor dysfunction and anatomy: a randomized trial.
Star Hampton B, Sung VW
Am J Obstet Gynecol. Jun;202(6):601.e1-601.e8

Objective: The objective of the study was to estimate the effect of an interactive computer trainer on improving medical student knowledge and attitudes regarding female pelvic anatomy (PA) and pelvic floor dysfunction (PFD). Study Design: Forty-three students were randomized to the trainer and usual teaching vs usual teaching alone. Pre- and postintervention knowledge and attitude questionnaires were completed. Between-group pre- and postintervention scores were analyzed. Multiple linear regression was used to estimate trainer effect on scores, adjusting for confounders. Results: There was no difference in baseline scores between groups ($P > .05$). The trainer group had significantly higher postintervention knowledge (mean score, 15.6 ± 1.9 vs 12.6 ± 2.5; $P = .007$) and attitude (mean score, 19.2 ± 2.8 vs 15.8 ± 3.2; $P = .001$) scores compared with the usual teaching group. On multiple linear regression, the trainer group had significantly higher postintervention knowledge and attitude scores, after adjusting for year of medical education and prior clerkships. Conclusion: An interactive computer trainer to teach female PA and PFD improves medical student knowledge and attitudes.

Correlations of interstitial cystitis/painful bladder syndrome with female sexual activity.
Yoon HS, Yoon H.
Korean J Urol. 2010 Jan;51(1):45-9.

PURPOSE: We investigated how the symptoms of interstitial cystitis/painful bladder syndrome (IC/PBS) are correlated with the sexual activity of these patients. MATERIALS AND METHODS: A total of 87 patients were included in this study; 18 patients were diagnosed with IC and the other 69 had PBS. The diagnosis was made on the basis of the concept of IC/PBS proposed by the ICS in 2002. Patients were asked to fill in a Bristol female lower urinary tract symptom questionnaire, and symptoms were rated on a scale of from 1 to 4 or 5. Pearson's correlation coefficient was used to analyze the correlation of pain and urinary symptoms with quality of life and sexual activity. RESULTS: The average age of the patients was 51+/-14.7 years (range, 28-74 years). Age and vulvodynia were positively correlated with one another (r=0.232), and there was a negative correlation between age and dyspareunia (r=-0.302). Among the items regarding IC/PBS and sexual activity, frequency showed a positive correlation with vulvodynia (r=0.258) in addition to an inhibited sex life (r=0.403). Urgency showed a positive correlation with an inhibited sex life (r=0.346). Vulvodynia showed a positive correlation with an inhibited sex life (r=0.259) and dyspareunia (r=0.401). The main symptoms of IC/PBS (frequency, urgency, and pelvic pain) showed a positive correlation with almost all items related to quality of life ($p<0.05$). CONCLUSIONS: Frequency, urgency, and various types.

Development, validation and testing of an epidemiological case definition of interstitial cystitis/painful bladder syndrome.
Berry SH, Bogart LM, Pham C, Liu K, Nyberg L, Stoto M, Suttorp M, Clemens JQ.
J Urol. 2010 May;183(5):1848-52.

PURPOSE: No standard case definition exists for interstitial cystitis/painful bladder syndrome for patient screening or epidemiological studies. As part of the RAND Interstitial Cystitis Epidemiology study, we developed a case definition for interstitial cystitis/painful bladder syndrome with known sensitivity and specificity. We compared this definition with others used in interstitial cystitis/painful bladder syndrome epidemiological studies. MATERIALS AND METHODS: We reviewed the literature and performed a structured, expert panel process to arrive at an interstitial cystitis/painful bladder syndrome case definition. We developed a questionnaire to assess interstitial cystitis/painful bladder syndrome symptoms using this case definition and others used in the literature. We administered the questionnaire to 599 women with interstitial cystitis/painful bladder syndrome, overactive bladder, endometriosis or vulvodynia. The sensitivity and specificity of each definition was calculated using physician assigned diagnoses as the reference standard. RESULTS: No single epidemiological definition had high sensitivity and high

specificity. Thus, 2 definitions were developed. One had high sensitivity (81%) and low specificity (54%), and the other had the converse (48% sensitivity and 83% specificity). These values were comparable or superior to those of other epidemiological definitions used in interstitial cystitis/painful bladder syndrome prevalence studies. CONCLUSIONS: No single case definition of interstitial cystitis/painful bladder syndrome provides high sensitivity and high specificity to identify the condition. For prevalence studies of interstitial cystitis/painful bladder syndrome the best approach may be to use 2 definitions that would yield a prevalence range. The RAND Interstitial Cystitis Epidemiology interstitial cystitis/painful bladder syndrome case definitions, developed through structured consensus and validation, can be used for this purpose.

Diagnosis and treatment of Interstitial Cystitis/Painful Bladder Syndrome.
Butrick CW, Howard FM, Sand PK.
J Womens Health (Larchmt). 2010 May 22. [Epub ahead of print]

Interstitial cystitis/painful bladder syndrome (IC/PBS) is a chronic bladder disorder characterized by pelvic pain and irritative voiding symptoms. The symptoms of IC/PBS can overlap with such conditions as endometriosis, recurrent urinary tract infection, chronic pelvic pain, overactive bladder, and vulvodynia. The etiology of IC/PBS is likely multifactorial and may involve a defective urothelium, neurogenic upregulation, and mast cell activation. A thorough patient history and physical examination are critical in the differential diagnosis of IC/PBS. Frequent follow-up and patient education are important components of treatment once a condition is diagnosed. A multimodal approach to therapy can provide optimal relief for patients with IC/PBS.

Urogenital complaints and female sexual dysfunction (part 1).
Wehbe SA, Whitmore K, Kellogg-Spadt S.
J Sex Med. 2010 May;7(5):1704-13; quiz 1703, 1714-5.

INTRODUCTION: Sexual dysfunction and dyspareunia are common complaints in women with urological disorders. AIM: To provide a comprehensive review of sexual dysfunction related to common hypersensitive/hyperactive urogenital disorders including interstitial cystitis/painful bladder syndrome (IC/PBS), overactive bladder (OAB) with and without incontinence, and high-tone pelvic floor muscle dysfunction and the appropriate treatment strategies. METHODS: A medical literature search using several related terms including sexual dysfunction, dyspareunia, IC/PBS, OAB, urinary incontinence pelvic floor dysfunction, and levator ani muscle spasm. MAIN OUTCOME MEASURES: Review of the medical literature to identify relation between sexual dysfunction and common urological disorders in women and to describe appropriate treatment strategies to improve the women's quality of life. RESULTS: A thorough review of sexual dysfunction in urological disorders and their related treatments modalities including: behavioral, pharmacological, and nonpharmacological therapies. CONCLUSIONS: Sexual dysfunction is a common, underestimated, and untreated complaint in women with urologic disorders. Identifying sexual complaints and treating the underlying etiologies can result in significant improvement in a woman's quality of life. This process requires a focused, multidisciplinary approach tailored to meet the needs of women with urogenital complaints.

The DSM diagnostic criteria for dyspareunia.
Binik YM.
Arch Sex Behav. 2010 Apr;39(2):292-303.

The DSM-IV-TR attempted to create a unitary category of dyspareunia based on the criterion of genital pain that interfered with sexual intercourse. This classificatory emphasis of interference with intercourse is reviewed and evaluated from both theoretical and empirical points of view. Neither of these points of view was found to support the notion of dyspareunia as a unitary disorder or its inclusion in the DSM-V as a sexual dysfunction. It seems highly likely that there are different syndromes of dyspareunia and that what is currently termed "superficial dyspareunia" cannot be differentiated reliably from vaginismus. It is

proposed that the diagnoses of vaginismus and dyspareunia be collapsed into a single diagnostic entity called genito-pelvic pain/penetration disorder. This diagnostic category is defined according to five dimensions: percentage success of vaginal penetration; pain with vaginal penetration; fear of vaginal penetration or of genito-pelvic pain during vaginal penetration; pelvic floor muscle dysfunction; medical co-morbidity.

Biopsychosocial factors associated with dyspareunia in a community sample of adolescent girls.
Landry T, Bergeron S.
Arch Sex Behav. 2010 Jun 22. [Epub ahead of print]

Although various biopsychosocial factors have been associated with dyspareunia, research to date has focused on retrospective reports of adult women, and lack of consensus regarding etiology remains. By targeting girls at the beginning of their reproductive life, this study aimed to examine the biomedical, behavioral, and psychosocial correlates of chronic painful intercourse in sexually active adolescents compared to pain-free girls. With written informed consent, data were obtained from 1425 girls (12-19 year olds) from seven metropolitan high schools using self-report questionnaires pertaining to gynaecologic/biomedical history, physical/psychological/sexual abuse, anxiety, depression, attitudes towards sexuality, and social support. While the chronic painful intercourse (n = 51) and pain-free comparison group (n = 167) did not differ significantly on biomedical variables, painful intercourse was associated with significantly more pain during tampon insertion, and avoidance of tampons was linked to a fourfold risk of experiencing pain during sex. Cases also reported engaging in significantly more detrimental vulvar hygiene habits than pain-free girls, whereas no significant group differences were observed for self-treatment using over-the-counter antifungal preparations. Sexual abuse, fear of physical abuse, and trait anxiety were identified as significant psychosocial correlates of chronic painful intercourse. A logistic regression further identified pain during first tampon insertion and trait anxiety as statistical predictors of adolescent pain during intercourse. In addition to a possible intrinsic dysfunction in central pain processing, findings suggest that psychological variables, such as anxiety, play a significant role in painful intercourse's very first manifestations in adolescent girls.

Sexual problems in 18-67-year-old Norwegians.
Træen B, Stigum H.
Scand J Public Health. 2010 May 21. [Epub ahead of print]

AIM: The aim of this study was to describe and analyse the prevalence of sexual problems in Norway. METHODS: The results are based on two samples from 2008, one of which was taken from 1671 web interviews in December among persons ranging from 18-67 years of age, and the other being a survey on sexual behaviour among a random sample of 12,000 Norwegians between the ages of 18 and 59, taken in April. Main outcome measures: The prevalence of sexual problems during the past 12 months. RESULTS: Generalised linear model analyses showed that the highest expected prevalence of manifest problems was found in the following groups: reduced sexual desire problems in 60-67-year-old women with university education (52%); orgasm problems in 18-29-year-old women with less than university education (32%); genital pain in 18-29-year-old women with less than university education (19%); premature ejaculation problems in 18-29-year-old men with less than university education (27%); delayed ejaculation problems in men with less than university education (12%); erectile dysfunction in 60-67-year-old men (34%); and lubrication problems in 60-67-year-old women living in southeast Norway (29%). Sexual problems correlated negatively with sexual wellbeing. CONCLUSIONS: This research indicates that sexual problems represent a public health problem.

Prevalence of sexual dysfunction and impact of contraception in female German medical students.
Wallwiener CW, Wallwiener LM, Seeger H, Mück AO, Bitzer J, Wallwiener M.
J Sex Med. 2010 May 4. [Epub ahead of print]

ABSTRACT Introduction. Female sexual dysfunction (FSD) is a very common disorder, with an estimated prevalence of having at least one sexual dysfunction of about 40%. Aim. To investigate the prevalence and types of FSD and the relationship between hormonal contraception (HC) and FSD in female German medical students. Main Outcome Measures. Female Sexual Function Index (FSFI) with additional questions on contraception, sexual activity, and other factors that may influence sexual function. Methods. An online questionnaire based on the FSFI was completed by students from six medical schools. Obtained data were screened for inconsistencies by programmed algorithms. Results. A total of 1,219 completed questionnaires were received, and 1,086 were included in the analyses after screening. The mean total FSFI score was 28.6 +/- 4.5. 32.4% of women were at risk for FSD according to FSFI definitions. Based on domain scores, 8.7% for were at risk for FSD concerning orgasm, 5.8% for desire, 2.6% for satisfaction, 1.2% for lubrication, 1.1% for pain and 1.0% for arousal. The method of contraception and smoking were factors with significant effect on the total FSFI score whereby hormonal contraception was associated with lower total FSFI scores and lower desire and arousal scores than no contraception and non-hormonal contraception only. Other variables such as stress, pregnancy, smoking, relationship and wish for children had an important impact on sexual function as expected according to earlier studies. Conclusions. The prevalence of students at high risk for FSD was consistent with the literature although domain subscores differed from samples previously described. The contraception method has a significant effect on the sexual functioning score and women using contraception, especially hormonal contraception, had lower sexual functioning scores. Stress and relationship among other variables were found to be associated with sexual function and may thus provide insight into the etiology of sexual disorders.

Sexual pain.
Boardman LA, Stockdale CK.
Clin Obstet Gynecol. 2009 Dec;52(4):682-90.

Sexual pain is an underrecognized and poorly treated constellation of disorders that significantly impact affected women and their partners. Recognized as a form of chronic pain, sexual pain disorders are heterogeneous and include dyspareunia (superficial and deep), vaginismus, vulvodynia, vestibulitis, and noncoital sexual pain disorder. Women too often tolerate pain in the belief that this will meet their partners' needs. This article provides a review of the terminology and definition of the condition, theories on the pathophysiology, diagnostic considerations, and recommendations on the management of female sexual pain.

Female Sexual Dysfunction: Recognizing the Impact on Patient and Partner – Online CME/CE
Green MA, Martinez LA

http://cme.medscape.com/viewarticle/721520

Sexuality and intimacy after gynecological cancer.
Ratner ES, Foran KA, Schwartz PE, Minkin MJ.
Maturitas. 2010 May;66(1):23-6.

Matters of sexuality and intimacy greatly impact quality of life of patients with gynecologic cancers. Vast amount of evidence exists showing that cancer dramatically impacts woman's sexuality, sexual functioning, intimate relationships and sense of self. Sexual functioning can be affected by illness, pain, anxiety, anger, stressful circumstances and medications. There is a growing acknowledgement that these needs are not being appropriately addressed by providers. With improvements in early detection, surgery

and adjuvant therapy for gynecologic cancer, long term survival and cure are becoming possible. Quality of life is thus becoming a major issue for patients. Patients suffer from hot flashes, difficulty sleeping, loss of libido and intimacy, all resulting in significant morbidity and loss of quality of life. Using hormone replacement therapy in gynecologic cancer survivors is a topic a great debate. While limited studies are available to date, retrospective cohort reviews show no reported differences in overall or disease-free survival in patients using hormone replacements vs. controls in patients with ovarian cancer, endometrial cancer, cervical, vaginal or vulva cancer. Since safety of using HRT remains controversial and prospective studies are lacking, providers need to be able to provide alternatives to HRT. Centrally acting agents such as antiseizure agent gabapentin and selective serotonine re-uptake inhibitors, such as venlafaxine and fluoxitine have been demonstrated to show effectiveness in treating vasomotor symptoms and are easily tolerated. To address cardiovascular and osteoporosis risks of post-menopausal status, exercise, healthy diet, bisphosphonates, raloxifen and statins have been found to be effective. Psychotherapy plays an essential part in management of these issues. Review of the literature reveals recent trends among health psychologists to utilize psychoeducational interventions that include combined elements of cognitive and behavioral therapy with education and mindfulness training. Intervention studies have found positive effects from this approach, particularly within the areas of arousal, orgasm, satisfaction, overall well-being, and decreased depression. Many of patients' issues are easy to address with either hormonal, non-hormonal or psychotherapy modifications. The essential part of success is the providers appreciation of this serous problem and willingness and comfort in addressing it.

Pain

Research design considerations for confirmatory chronic pain clinical trials: IMMPACT recommendations.
Dworkin RH, Turk DC, Peirce-Sandner S, Baron R, Bellamy N, Burke LB, Chappell A, Chartier K, Cleeland CS, Costello A, Cowan P, Dimitrova R, Ellenberg S, Farrar JT, French JA, Gilron I, Hertz S, Jadad AR, Jay GW, Kalliomäki J, Katz NP, Kerns RD, Manning DC, McDermott MP, McGrath PJ, Narayana A, Porter L, Quessy S, Rappaport BA, Rauschkolb C, Reeve BB, Rhodes T, Sampaio C, Simpson DM, Stauffer JW, Stucki G, Tobias J, White RE, Witter J.
Pain, May; 149(2): 177-93.

There has been an increase in the number of chronic pain clinical trials in which the treatments being evaluated did not differ significantly from placebo in the primary efficacy analyses despite previous research suggesting that efficacy could be expected. These findings could reflect a true lack of efficacy or methodological and other aspects of these trials that compromise the demonstration of efficacy. There is substantial variability among chronic pain clinical trials with respect to important research design considerations, and identifying and addressing any methodological weaknesses would enhance the likelihood of demonstrating the analgesic effects of new interventions. An IMMPACT consensus meeting was therefore convened to identify the critical research design considerations for confirmatory chronic pain trials and to make recommendations for their conduct. We present recommendations for the major components of confirmatory chronic pain clinical trials, including participant selection, trial phases and duration, treatment groups and dosing regimens, and types of trials. Increased attention to and research on the methodological aspects of confirmatory chronic pain clinical trials has the potential to enhance their assay sensitivity and ultimately provide more meaningful evaluations of treatments for chronic pain.

Pharmacological treatment of chronic pain - the need for CHANGE.
Varrassi G, Müller-Schwefe G, Pergolizzi J, Orónska A, Morlion B, Mavrocordatos P, Margarit C, Mangas C, Jaksch W, Huygen F, Collett B, Berti M, Aldington D, Ahlbeck K.
Curr Med Res Opin. 2010 May;26(5):1231-45.

BACKGROUND: Although chronic pain affects around 20% of adults in Europe and the USA, there is substantial evidence that it is inadequately treated. In June 2009, an international group of pain specialists met in Brussels to identify the reasons for this and to achieve consensus on strategies for

improving pain management. SCOPE: Literature on chronic pain management was reviewed, and information presented to and discussed by a panel of experts. FINDINGS: It was agreed that guidelines are not universally accepted by those involved in pain management, and pain treatment seems to be driven mainly by tradition and personal experience. Other factors include poor communication between patients and physicians, the side effects of analgesic drugs, and limited individualisation of therapy. Difficulty in maintaining the balance between adequate pain relief and acceptable tolerability, particularly with strong opioids, can lead to the establishment of a 'vicious circle' that alternates between lack of efficacy and unpleasant side effects, prompting discontinuation of treatment. The medical community's understanding of the physiological differences between nociceptive pain and neuropathic pain, which is often more severe and difficult to treat, could be improved. Increasing physicians' knowledge of the pharmacological options available to manage these different pain mechanisms offers the promise of better treatment decisions and more widespread adoption of a multi-mechanistic approach; this could involve loosely combining two substances from different drug classes, or administering an analgesic with two different mechanisms of action. In some circumstances, a single compound capable of addressing both nociceptive and neuropathic pain is desirable. CONCLUSIONS: To improve patient outcomes, a thorough understanding of pain mechanisms, sensitisation and multi-mechanistic management is required. Universal, user-friendly educational tools are therefore required to familiarise physicians with these topics, and also to improve communication between physicians and their pain patients, so that realistic expectations of treatment can be established.

Gender differences in pain modulation by diffuse noxious inhibitory controls: A systematic review.
Popescu A, Leresche L, Truelove EL, Drangsholt MT.
Pain. 2010 Jun 15. [Epub ahead of print]

Over the last decade, extensive research has demonstrated sex differences in pain perception and modulation. Several factors have been proposed to account for the differences observed between men and women, including pain modulation through diffuse noxious inhibitory controls (DNIC). Studies investigating sex differences in DNIC have shown mixed results, with some reporting decreased DNIC effect in women compared with men, while others found no difference in DNIC between the sexes. Additional studies have investigated DNIC in both sexes without focusing on sex differences. This systematic review aimed to answer the following question: "In humans of reproductive age without chronic pain, are women more likely than men to have decreased Diffuse Noxious Inhibitory Controls?" Relevant studies were identified by computerized searches of Pubmed/Medline, Embase, Biosis, Web of Science, PsycInfo and Cochrane (from January 1980 through February 2009). The search was limited to human studies with no language restriction. The initial search identified 718 titles and abstracts. Seventeen studies were included in the final stage and data regarding age and gender of participants, methodology and outcome measurements were extracted and analyzed. The majority of studies using pain report as the outcome found significantly more efficient DNIC in males than females (mean female/male ratio=0.54). Studies evaluating pain thresholds and nociceptive flexion reflex indicated the opposite when simply averaged across studies; however, weighted analyses of threshold found more efficient DNIC in males. Gender differences in DNIC effect depend on both the experimental methodology and the modes of measurement of the effect.

Methadone: does stigma play a role as a barrier to treatment of chronic pain?
Shah S, Diwan S.
Arch Sex Behav. 2010 Apr;39(2):292-303.

INTRODUCTION: The synthetic opioid methadone is a promising analgesic for the management of chronic neuropathic pain. Methadone therapy is increasing as its advantages are being realized over other opioids. Methadone's lack of known active metabolites, high oral bioavailability, low cost, and its additional receptor activity as an antagonist of N-methyl-D-aspartate receptors make it an attractive analgesic. METHODS: We surveyed 550 pain physicians to determine their prescribing practices of methadone. The study was approved by our Institutional Review Board. A list of 550 pain physicians,

which included practitioners in private practice, university settings, and community hospitals, were obtained and surveys sent via mail. The list was obtained through the American Pain Society's membership list. Out of 550 surveys sent, 124 replies were returned. RESULTS: The 124 surveys that were returned included pain physicians from various settings: 20 responses from physicians practicing at a university setting, 16 responses from a community setting, 54 responses from a private setting, one from university and community settings, 7 from community and private settings, 3 from university and community and private settings; 23 did not specify. Of the 124 physicians, 111 prescribe methadone in their pain practice. Of the 13 physicians who do not prescribe methadone, the main reason for not using the drug for 5 physicians was because of social stigma, 2 because of minimal experience with the drug, 2 because the drug was not effective, one because of lack of knowledge, and one because of potential adverse effects. Of the 111 physicians who use methadone, 55 stated that social stigma was the most common reason patients refuse to take methadone for the treatment of pain, 44 because of adverse effects, and 5 stated "other" as the reason patients refuse to take methadone. Of 111 physicians who prescribe methadone, 100 prescribed it for neuropathic pain, 101 for somatic pain, 80 for visceral pain, 78 for cancer pain, and 34 for sickle cell pain. Also, 21 stated that methadone was the primary opioid they prescribed. Of the 111 physicians who prescribe methadone, 86 start methadone at low dose and titrate up to minimize side effects. Fourteen clinicians load methadone and titrate down to minimize adverse effects while maintaining analgesia. CONCLUSION: The majority of survey responders (90%) prescribed methadone in their pain practice, but on a very limited basis; 59% state <20% of their patients are on methadone. Three times a day dosing schedule was the most typical regimen (57%) while 77% prefer to titrate up on the dosage. It seems interesting that many clinicians do not prescribe methadone as a primary analgesic. One reason for this is due to the social stigma of its use in treatment of heroin addicts. Also, a lack of widely recognized treatment algorithms or guidelines to assist clinicians with opioid conversions and maintenance might be playing a role. The role of stigma as a barrier to adequate treatment of chronic pain among pain physicians prescribing practices is a fundamental, yet unexplored issue.

Role of spinal cord glia in the central processing of peripheral pain perception.
Bradesi S.
Neurogastroenterol Motil. 2010 May;22(5):499-511.

BACKGROUND: The discovery that glial activation plays a critical role in the modulation of neuronal functions and affects the spinal processing of nociceptive signalling has brought new understanding on the mechanisms underlying central sensitization involved in chronic pain facilitation. Spinal glial activation is now considered an important component in the development and maintenance of allodynia and hyperalgesia in various models of chronic pain, including neuropathic pain and pain associated with peripheral inflammation. In addition, spinal glial activation is also involved in some forms of visceral hyperalgesia. PURPOSE: We discuss the signalling pathways engaged in central glial activation, including stress pathways, and the neuron-glia bidirectional relationships involved in the modulation of synaptic activity and pain facilitation. In this expanding field of research, the characterization of the mechanisms by which glia affect spinal neuro-transmission will increase our understanding of central pain facilitation, and has the potential for the development of new therapeutic agents for common chronic pain conditions.

Can satellite glial cells be therapeutic targets for pain control?
Jasmin L, Vit JP, Bhargava A, Ohara PT.
Neuron Glia Biol. 2010 Jun 22:1-9. [Epub ahead of print]

Satellite glial cells (SGCs) undergo phenotypic changes and divide the following injury into a peripheral nerve. Nerve injury, also elicits an immune response and several antigen-presenting cells are found in close proximity to SGCs. Silencing SCG-specific molecules involved in intercellular transport (Connexin 43) or glutamate recycling (glutamine synthase) can dramatically alter nociceptive responses of normal and nerve-injured rats. Transducing SGCs with glutamic acid decarboxylase can produce analgesia in

models of trigeminal pain. Taken together these data suggest that SGCs may play a role in the genesis or maintenance of pain and open a range of new possibilities for curing neuropathic pain.

Cortical disinhibition occurs in chronic neuropathic, but not in chronic nociceptive pain.
Schwenkreis P, Scherens A, Ronnau AK, Hoffken O, Tegenthoff M, Maier C.
BMC Neurosci. 2010 Jun 11;11(1):73. [Epub ahead of print]

ABSTRACT: BACKGROUND: The aim of this study was to examine the relationship between chronic neuropathic pain after incomplete peripheral nerve lesion, chronic nociceptive pain due to osteoarthritis, and the excitability of the motor cortex assessed by transcranial magnetic stimulation (TMS). Hence in 26 patients with neuropathic pain resulting from an isolated incomplete lesion of the median or ulnar nerve (neuralgia), 20 patients with painful osteoarthritis of the hand, and 14 healthy control subjects, the excitability of the motor cortex was tested using paired-pulse TMS to assess intracortical inhibition and facilitation. These excitability parameters were compared between groups, and the relationship between excitability parameters and clinical parameters was examined. RESULTS: We found a significant reduction of intracortical inhibition in the hemisphere contralateral to the lesioned nerve in the neuralgia patients. Intracortical inhibition in the ipsilateral hemisphere of neuralgia patients and in both hemispheres of osteoarthritis patients did not significantly differ from the control group. Disinhibition was significantly more pronounced in neuralgia patients with moderate/severe pain intensity than in patients with mild pain intensity, whereas the relative compound motor action potential as a parameter of nerve injury severity did not correlate with the amount of disinhibition. CONCLUSIONS: Our results suggest a close relationship between motor cortex inhibition and chronic neuropathic pain in the neuralgia patients, which is independent from nerve injury severity. The lack of cortical disinhibition in patients with painful osteoarthritis points at differences in the pathophysiological processes of different chronic pain conditions with respect to the involvement of different brain circuitry.

Kappa opioids and the modulation of pain.
Kivell B, Prisinzano TE.
Psychopharmacology (Berl). 2010 Jun;210(2):109-19.

BACKGROUND AND RATIONALE: Pain is a complex sensory experience, involving cognitive factors, environment (setting, society, and culture), experience, and gender and is modulated significantly by the central nervous system (CNS). The mechanisms by which opioid analgesics work are understood, but this class of drugs is not ideal as either an analgesic or anti-hyperalgesic. Accordingly, considerable effort continues to be directed at improved understanding of nociceptor function and development of selective analgesics that do not have the unwanted effects associated with opioid analgesics. OBJECTIVE: The purpose of this paper is to provide a review of the role of KOP receptors in the modulation of pain and highlight several chemotypes currently being explored as peripherally restricted KOP ligands. RESULTS: A growing body of literature has shown that KOP receptors are implicated in a variety of behavioral pain models. Several different classes of peripherally restricted peptidic and nonpeptidic KOP agonists have been identified and show utility in treating painful conditions. CONCLUSION: The pharmacological profile of KOP agonists in visceral pain models suggest that peripherally restricted KOP agonists are potentially useful for a variety of peripheral pain states. Further, clinical investigation of peripherally restricted KOP agonists will help to clarify the painful conditions where KOP agonists will be most effective.

Targeting TRPV1 as an alternative approach to narcotic analgesics to treat chronic pain conditions.
Premkumar LS.
AAPS J. 2010 Sep;12(3):361-70.

In spite of intense research efforts and after the dedicated Decade of Pain Control and Research, there are not many alternatives to opioid-based narcotic analgesics in the therapeutic armamentarium to treat chronic pain conditions. Chronic opioid treatment is associated with sedation, tolerance, dependence,

hyperalgesia, respiratory depression, and constipation. Since the affective component is an integral part of pain perception, perhaps it is inevitable that potent analgesics possess the property of impacting pain pathways in the supraspinal structures. The question still remains to be answered is that whether a powerful analgesic can be devoid of narcotic effect and addictive potentials. Local anesthetics are powerful analgesics for acute pain by blocking voltage-gated sodium channels that are involved in generation and propagation of action potentials. Antidepressants and anticonvulsants have proven to be useful in the treatment of certain modalities of pain. In neuropathic pain conditions, the complexity arises because of the notion that neuronal circuitry is altered, as occurs in phantom pain, in that pain is perceived even in the absence of peripheral nociceptive inputs. If the locus of these changes is in the central nervous system, commonly used analgesics may not be very useful. This review focuses on the recent advances in nociceptive transmission and nociceptive transient receptor potential vanilloid 1 channel as a target for treating chronic pain conditions with its agonists/antagonists.

TNF-alpha and neuropathic pain--a review.
Leung L, Cahill CM.
J Neuroinflammation. 2010 Apr 16;7:27.

Tumor necrosis factor alpha (TNF-alpha) was discovered more than a century ago, and its known roles have extended from within the immune system to include a neuro-inflammatory domain in the nervous system. Neuropathic pain is a recognized type of pathological pain where nociceptive responses persist beyond the resolution of damage to the nerve or its surrounding tissue. Very often, neuropathic pain is disproportionately enhanced in intensity (hyperalgesia) or altered in modality (hyperpathia or allodynia) in relation to the stimuli. At time of this writing, there is as yet no common consensus about the etiology of neuropathic pain - possible mechanisms can be categorized into peripheral sensitization and central sensitization of the nervous system in response to the nociceptive stimuli. Animal models of neuropathic pain based on various types of nerve injuries (peripheral versus spinal nerve, ligation versus chronic constrictive injury) have persistently implicated a pivotal role for TNF-alpha at both peripheral and central levels of sensitization. Despite a lack of success in clinical trials of anti-TNF-alpha therapy in alleviating the sciatic type of neuropathic pain, the intricate link of TNF-alpha with other neuro-inflammatory signaling systems (e.g., chemokines and p38 MAPK) has indeed inspired a systems approach perspective for future drug development in treating neuropathic pain.

Other Vulvovaginal Disorders

Long-term management of vulval lichen sclerosus in adult women.
Bradford J, Fischer G.
Aust N Z J Obstet Gynaecol. 2010 Apr;50(2):148-52.

BACKGROUND: Adult vulval lichen sclerosus (VLS) is usually a lifelong disease with an estimated remission rate after treatment of only 16% [Arch Dermatol 2004; 140 (6): 709]. Although superpotent topical corticosteroid (TCS) is the validated gold standard treatment to induce remission, little data are available on how remission should be maintained. AIMS: We present a retrospective chart review of 129 adult patients with VLS who have been under surveillance by the authors for a minimum duration of three years. METHODS: Remission was maintained in most patients with low-to-moderate potency TCS. All subjects' symptoms, signs, treatment regimes and response to treatment including compliance, symptom remission, disease progression with scarring, squamous cell carcinoma and side effects were recorded. Data were compared for the compliant and non-compliant groups. Fischer's exact test was used to identify significant differences. RESULTS: The mean age at presentation was 53.6 years and mean duration of follow-up was 6.2 years. Compliance was excellent: 84 (65%) of patients' self-reporting as being fully compliant. Symptom remission was achieved in 98% of compliant and 75% of non-compliant patients (P = 0.001) Progression of disease with scarring was not encountered in any of the compliant patients, but was seen in 35% of non-compliant patients (P = 0.0001). One patient had squamous cell

carcinoma on first presentation. Carcinoma subsequently occurred in none of the compliant patients, and in five partly compliant patients (P = 0.004). Mild, reversible corticosteroid side effects were encountered in 7% of patients. CONCLUSIONS: Long-term treatment of adult VLS with individualised regimes using moderate potency TCS is safe and effective. Patients require long-term follow-up.

Bilateral zosteriform extragenital lichen sclerosus et atrophicus: a new clinical presentation.
Chen JF, Chiang CP, Chen YF.
J Dermatol. 2010 May;37(5):480-3.

We report a 13-year-old female child with sequentially occurring lesions of extragenital zosteriform lichen sclerosus et atrophicus (LSA). The skin lesions first appeared at the right waist when she was 8 years and gradually extended inferiorly and medially along the dermatome of the right L1-2. Subsequently, another skin lesion occurred along the dermatome of the left L5-S1 from the left buttock to left dorsum of the foot in the following 5 years. Microscopic findings obtained from the right inguinal sclerotic plaque revealed typical features of LSA. We report the first case of bilateral zosteriform LSA and remind clinicians of including lichen sclerosus in the differential diagnoses of cutaneous zosteriform lesions.

Occurrence of circulating anti-bullous pemphigoid antibodies in patients with lichen sclerosus.
Gambichler T, Höxtermann S, Skrygan M, Eberz B, Regauer S, Scola N, Kreuter A.
J Eur Acad Dermatol Venereol. 2010 May 26. [Epub ahead of print]

No abstract available.

Childhood vulval lichen sclerosus: autoimmunity to the basement membrane zone protein BP180 and its relationship to autoimmunity.
Baldo M, Bhogal B, Groves RW, Powell J, Wojnarowska F.
Clin Exp Dermatol. 2010 Apr 26. [Epub ahead of print]

Lichen sclerosus (LS) is associated with autoimmune disease in female children and adults. In adult women, there are antibody and T-cell responses to proteins in the basement membrane zone (BMZ). The aim of this study was to investigate reactivity to the BMZ in girls with LS. Nine girls with vulval LS were studied clinically and serologically. The presence of circulating BMZ autoantibodies was investigated. Autoimmunity was assessed by personal and family history of autoimmune diseases and autoantibodies. We detected circulating BMZ antibodies in four of the nine children, all with IgG responses. Three patients were positive by indirect immunofluorescence, one had a positive ELISA reaction to bullous pemphigoid antigen (BP)180, and three had a positive reaction on BP180 immunoblots. There was no association with autoimmune disease or clinical features. To our knowledge, this is the first study to find BMZ autoantibodies in children with vulval LS. The autoantibodies were directed at BP180 and were exclusively of the IgG class.

Lichen sclerosus: treatment and follow-up at the departments of gynaecology and dermatology.
van der Avoort IA, Tiemes DE, van Rossum MM, van der Vleuten CJ, Massuger LF, de Hullu JA.
J Low Genit Tract Dis. 2010 Apr;14(2):118-23.

OBJECTIVE: To compare the treatment and follow-up of patients with lichen sclerosus (LS) at the departments of Gynaecology and Dermatology at the Radboud University Nijmegen Medical Centre, Nijmegen, the Netherlands, to evaluate the need for a multidisciplinary vulvar clinic. MATERIALS AND METHODS: Treatment and follow-up data of all women with histologically proven (between January 1995 and January 2001) anogenital LS visiting the outpatient clinics of the departments of Obstetrics & Gynaecology and Dermatology were collected (last date of follow-up: January 2008). RESULTS: Eighty-four patients with LS were included in this study, 10 patients (12%) of which were treated by both specialties. At the Gynaecology department, LS patients more often received surgical treatment, topical

estrogens, and lidocaine ointment, whereas at the Dermatology department, local class 2/3 corticosteroids were more often prescribed. Follow-up frequencies were similar in both specialties and took place at 3 to 4 visits in the first year and at least once a year afterward. One patient developed vulvar squamous cell carcinoma. This patient had withdrawn from follow-up and had her condition diagnosed with carcinoma 74 months after the LS had been diagnosed. CONCLUSIONS: Although no hospital guidelines existed, management of patients with LS agreed with current recommendations in the literature, although differences in secondary and supportive therapy existed owing to differences in expertise. The relatively high percentage of patients treated by both specialties with a high frequency of visits emphasizes the need for a multidisciplinary clinic for vulvar disease.

Correlation between azole susceptibilities, genotypes and ERG11 mutations in Candida albicans isolates associated with vulvovaginal candidiasis in China.
Ge SH, Wan Z, Li J, Xu J, Li RY, Bai FY.
Antimicrob Agents Chemother. 2010 Jun 1. [Epub ahead of print]

The relationship between susceptibilities to fluconazole and itraconazole and microsatellite CAI genotypes were examined from a total of 154 Candida albicans isolates (97 causing vulvovaginitis of Chinese women, six from vaginas and 51 from oral cavities of asymptomatic carriers). The two dominant genotypes CAI 30-45 (45 isolates) and CAI 32-46 (33 isolates) associated with vulvovaginitis showed significantly different azole susceptibility patterns with strong statistical support. CAI 32-46 isolates were usually less susceptible to both fluconazole and itraconazole than CAI 30-45 isolates and than the oral isolates with other diversified CAI genotypes. Remarkably different mutation patterns in the azole target gene ERG11 were correspondingly observed among C. albicans isolates representing different genotypes and sources. Isolates with the same or similar CAI genotypes usually possessed identical or phylogenetically closely related ERG11 sequences. Loss of heterozygosity in ERG11 was observed in all the CAI 32-46 isolates but not in the CAI 30-45 isolates and most of the oral isolates sequenced. When compared with the ERG11 sequence of strain SC5314 (X13296), exclusively two homozygous missense mutations (G487T and T916C) leading to two amino acid changes (A114S and Y257H) in Erg11p were found in CAI 32-46 isolates. The correlation between azole susceptibility and C. albicans genotyping may be of potential therapeutic significance.

Premalignant epithelial disorders of the vulva: squamous vulvar intraepithelial neoplasia, vulvar Paget's disease and melanoma in situ.
Terlou A, Blok LJ, Helmerhorst TJ, van Beurden M.
Acta Obstet Gynecol Scand. 2010 Jun;89(6):741-8.

No standard screening programs exist to detect vulvar carcinoma or its precursor lesions, and therefore gynecologists, dermatologists and other healthcare providers in this field should be aware of the clinical features, behavior and management of the different existing premalignant vulvar lesions, squamous vulvar intraepithelial neoplasia (VIN), vulvar Paget's disease and melanoma in situ. In 2004, a new classification for squamous VIN was introduced by the International Society for the Study of Vulvar Disease, subdividing squamous VIN into the HPV-related usual type, and into differentiated type, which is associated with lichen sclerosus. This review describes the relevant aspects of squamous VIN, vulvar Paget's disease and melanoma in situ, its epidemiological characteristics, diagnosis, management and malignant potential.

Lactic acid bacteria colonization and clinical outcome after probiotic supplementation in conventionally treated bacterial vaginosis and vulvovaginal candidiasis.
Ehrström S, Daroczy K, Rylander E, Samuelsson C, Johannesson U, Anzén B, Påhlson C.
Microbes Infect. 2010 May 13. [Epub ahead of print]

This randomized double-blind placebo controlled study assessed the vaginal colonization of lactic acid bacteria and clinical outcome. Vaginal capsules containing L gasseri LN40, L. fermentum LN99, L. casei

subsp. rhamnosus LN113 and P. acidilactici LN23, or placebos were administered for five days to 95 women after conventional treatment of bacterial vaginosis and/or vulvovaginal candidiasis. Vulvovaginal examinations and vaginal samplings were performed before and after administration, after the first and second menstruation, and after six months. Presence of LN strains was assessed using RAPD analysis. LN strains were present 2-3 days after administration in 89% of the women receiving LN strains (placebo: 0%, p<0.0001). After one menstruation 53% were colonized by at least one LN strain. Nine percent were still colonized six months after administration. Ninety-three percent of the women receiving LN strains were cured 2-3 days after administration (placebo: 83%), and 78% after one menstruation (placebo: 71%) (ns). The intervention group experienced less malodorous discharge 2-3 days after administration (p = 0.03) and after the second menstruation (p = 0.04), compared with placebo. In summary, five days of vaginal administration of LN strains after conventional treatment of bacterial vaginosis and/or vulvovaginal candidiasis lead to vaginal colonization, somewhat fewer recurrences and less malodorous discharge.

Diagnosis of vulvovaginitis: comparison of clinical and microbiological diagnosis.
Esim Buyukbayrak E, Kars B, Karsidag AY, Karadeniz BI, Kaymaz O, Gencer S, Pirimoglu ZM, Unal O, Turan MC.
Arch Gynecol Obstet. 2010 May 12. [Epub ahead of print]

OBJECTIVE: The purpose of the present study was to compare the current diagnostic clinical and laboratory approaches to women with vulvovaginal discharge complaint. The secondary outcomes were to determine the prevalence of infections in our setting and to look for the relation between vulvovaginal infections and predisposing factors if present. METHOD: Premenopausal women applying to our gynecology outpatient clinic with vaginal discharge complaint were enrolled prospectively into the study. Each patient evaluated clinically with direct observation of vaginal secretions, wet mount examination, whiff test, vaginal pH testing and chlamydia rapid antigen test. Each patient also evaluated microbiologically with vaginal discharge culture and gram staining. Clinical diagnosis was compared with the microbiological diagnosis (the gold standard). Diagnostic accuracy was measured with sensitivity, specificity, positive (ppv) and negative predictive values (npv). RESULTS: 460 patients were included in the study. 89.8% of patients received a clinical diagnosis whereas only 36% of them had microbiological diagnosis. The sensitivity, specificity, ppv, npv of clinical diagnosis over microbiological culture results were 95, 13, 38, 82%, respectively. The most commonly encountered microorganisms by culture were Candida species (17.4%) and Gardnerella vaginalis (10.2%). Clinically, the most commonly made diagnoses were mixed infection (34.1%), bacterial vaginosis (32.4%) and fungal infection (14.1%). Symptoms did not predict laboratory results. Predisposing factors (DM, vaginal douching practice, presence of IUD and usage of oral contraceptive pills) were not found to be statistically important influencing factors for vaginal infections. CONCLUSION: Clinical diagnosis based on combining symptoms with office-based testing improves diagnostic accuracy but is insufficient. The most effective approach also incorporates laboratory testing as an adjunct when a diagnosis is in question or treatment is failing.

Chronic vulvitis in pre-pubertal girls.
Fischer G.
Australas J Dermatol. 2010 May;51(2):118-23.

Pre-pubertal girls with inflammatory chronic vulval disease excluding lichen sclerosus are often described as having 'non-specific vulvovaginitis'. The aim of this retrospective case series was to determine the aetiology of chronic vulvovaginitis in pre-pubertal (Tanner Stage 1) girls, with particular reference to candidiasis. A chart review recorded and compared the characteristics of 38 girls and 68 post-menarchal adolescents and pre-menopausal women with chronic vulvitis. Nineteen (50%) of the pre-pubertal children had been previously diagnosed with candidiasis and 21 (55%) had been treated unsuccessfully with topical antifungal agents. Candida albicans was isolated in two (5%) of the children and 37 (54%) of the adults (P < 0.001). A positive Candida culture was causally associated with chronic vulvovaginitis in 50% of the adults but in none of the children (P < 0.001). In 28 (74%) of the children and 28 (41%) of the adults, no pathogens were isolated on microbiological testing. General skin examination of the girls

revealed signs of psoriasis in 27 (71%) and atopic dermatitis in nine (24%). Symptoms were controlled with topical anti-inflammatory treatment and environmental modification, including cessation of topical antifungals. Pre-pubertal girls with chronic vulvitis are likely to have either psoriasis or atopic dermatitis. Chronic vulvovaginal candidiasis is not seen in Tanner Stage 1 girls.

Candida infections of the genitourinary tract.
Achkar JM, Fries BC.
Clin Microbiol Rev. 2010 Apr;23(2):253-73.

All humans are colonized with Candida species, mostly Candida albicans, yet some develop diseases due to Candida, among which genitourinary manifestations are extremely common. The forms of genitourinary candidiasis are distinct from each other and affect different populations. While vulvovaginal candidiasis affects mostly healthy women, candiduria occurs typically in elderly, hospitalized, or immunocompromised patients and in neonates. Despite its high incidence and clinical relevance, genitourinary candidiasis is understudied, and therefore, important questions about pathogenesis and treatment guidelines remain to be resolved. In this review, we summarize the current knowledge about genitourinary candidiasis.

Correlation of Trichomonas vaginalis to bacterial vaginosis: a laboratory-based study.
El Sayed Zaki M, Raafat D, El Emshaty W, Azab MS, Goda H.
J Infect Dev Ctries. 2010 Mar 29;4(3):156-63.

BACKGROUND: This study aimed to define the occurrence of different organisms causing vulvovaginitis; to evaluate different laboratory methods used for diagnosis of Trichomonas vaginalis (T. vaginalis); and to evaluate the direct score system and clue cell method compared with culture for diagnosis of bacterial and T. vaginalis vaginosis. METHODOLOGY: Clinical and laboratory evaluations were performed for 110 patients. Laboratory methods used for bacteriological diagnosis were direct Gram staining for clue cells and scoring by Nugent score system and bacterial culture. T. vaginalis was identified by wet mount microscopic examination, culture, direct Gram, Giemsa staining and acridine orange (AO). RESULTS: The Nugent score method revealed that the sensitivity and specificity for diagnosis of vaginal discharge by direct rapid microscopic methods were 30% and 80% and for clue cells sensitivity and specificity were 37% and 75% respectively for diagnosis of bacterial vaginosis compared to culture. For diagnosis of T. vaginalis, the Nugent score method revealed that the sensitivity and specificity were 60% and 90% respectively, and for clue cells 75% and 80% respectively. For microcopic methods used for T. vaginalis only, the Gram stain and Giemsa stain sensitivities were poor (15.2% and 48.5%, respectively). Wet mount showed reasonable sensitivity of 75.8%. Acridine orange sensitivity was 93.9% and specificity was 97.5%, CONCLUSION: Prevalent pathogens associated with vaginitis were (Gardnerella vaginalis) G. vaginalis, T. vaginalis and Mycoplasma hominis (M. hominis). Wet mount microscopic examination, acridine orange, and high Nugent score were found as rapid and sensitive methods for diagnosis of T. vaginalis.

Prevalence and management of non-albicans vaginal candidiasis.
Hetticarachchi N, Ashbee HR, Wilson JD.
Sex Transm Infect. 2010 Apr;86(2):99-100.

OBJECTIVES: It is thought that widespread use of 'over-the-counter' azoles may increase the incidence of resistant Candida species such as Candida glabrata. Infections with species other than Candida albicans frequently do not respond to standard azole treatments. Intravaginal nystatin is an option but is no longer available in the UK. In this paper, the authors review the prevalence of non-albicans candida over the past 5 years, and assess the efficacy of amphotericin and flucytosine vaginal cream in the treatment of non-albicans VVC. METHODS: Retrospective review of all vaginal yeast isolates collected from women attending a city centre sexual-health clinic between 2004 and 2008. The women prescribed amphotericin and flucytosine vaginal cream were identified through pharmacy records, and their clinical

notes reviewed for treatment outcome. RESULTS: Between 2004 and 2008, the number of isolates of all Candida species increased with increasing clinic workload, but the prevalence of non-albicans yeasts remained stable at between 0.87 and 1.06%. Eighteen patients were prescribed amphotericin and flucytosine vaginal cream. At follow-up, all 18 were clear of their initial yeast isolate on culture, but two had persistent symptoms and had positive cultures for C albicans. CONCLUSIONS: There is no evidence of any increase in prevalence of non-albicans Candida species such as C glabrata. The authors have treated 18 women who had non-albicans VVC with amphotericin and flucytosine vaginal cream and achieved clearance of the non-albicans species in all of them.

Anatomy / Basic Science

Sectional neuroanatomy of the pelvic floor.
Kass JS, Chiou-Tan FY, Harrell JS, Zhang H, Taber KH.
J Comput Assist Tomogr. 2010 May-Jun;34(3):473-7.

This is the sixth in a series of articles on the spine. The first 5 reviewed the sectional anatomy of the cervical, thoracic, and lumbosacral spines. This paper will review both the male and female pelves. Procedures performed in the pelvis include electromyography of the anal sphincter, pudendal and sacral nerve stimulator implants, and botulinum toxin type A injections into the prostate, the bladder, the urethra, and the anus. Complications from these procedures are rare. Electromyography in this region is particularly uncomfortable. Botulinum toxin type A denervation may result in local effects such as incontinence or urinary retention or rarely remote effects such as limb weakness. Neurostimulators may get infected or may fail. This article provides anatomically accurate schematics of innervations of the pelvis that can be used to interpret magnetic resonance images of muscles and nerves in the pelvic floor region. Cross-sectional schematics of the male and female pelves were drawn as they appear on imaging projections. The relevant nerves were color coded. The muscles and the skin surfaces were labeled and assigned the color of the appropriate nerves. An organized comprehensive map of the motor innervation of both the male and female pelvis allows the physician to increase the accuracy and efficacy of interventional procedures. This anatomic map could also assist the electromyographer in correlating the clinical and electrophysiologic findings on magnetic resonance images.