

Vesica



Sydney Urodynamic Centres newsletter for medical practitioners

The role of cranberries in the management of urinary tract infections

by Andrew Korda

Urinary tract infection (UTI) is one of the most common bacterial infections in women. About half of all women will suffer from a urinary tract infection at some stage in their lives. Of the different pathogens, *Escherichia coli* is the organism most commonly isolated.

Women are 30 to 50 times more likely to suffer UTIs than men. They have a much shorter distance between the rectum and the urethral opening and they have a shorter urethra.

Recurrent urinary tract infection is a common problem and can affect women of all ages, particularly the elderly and pregnant women. The major risk groups are women aged between 25 to 29 (sexual activity is a factor) and over 55 (lower levels of oestrogen). About a third of women who have a UTI will have a recurrence the following year.

Medical practitioners involved in women's health need to have up-to-date knowledge of the diagnosis, pathophysiology and management of this condition.

The diagnosis of urinary tract infection is made on the basis of symptoms and bacteriuria of more than 103 bacteria per ml. Host and bacterial virulence factors are important in the pathogenesis of recurrent urinary tract infections. General host factors predisposing to recurrent infection are genetic factors, ageing, the menopause, urogenital dysfunction, sexual behaviour, and previous pelvic surgery.

Urinary tract infection is also common in pregnancy, and studies have suggested an association with foetal mental retardation and developmental delay. Women with recurrent urinary tract infection in pregnancy should be considered for long-term antibiotic prophylaxis.

A variety of treatment options have been proposed, including long-term or post-intercourse prophylaxis and patient-initiated therapy. Oestrogen and cranberry juice have also been used as prophylactic treatment adjuncts.



Intravaginal oestrogens and cranberry juice have been found to be effective for prevention. Women with recurrent urinary tract infection should have at least a 3-day course of trimethoprim or cotrimoxazole, or a 5-day course of beta-lactams or nitrofurantoin, with perhaps a 10-day course in the elderly.

Women with frequent urinary tract infection (more than three episodes per year) should be offered prophylactic antibiotics, which can be patient-initiated, postcoital, or long-term low-dose therapy. In the future, vaccines against specific uropathogenic bacteria may be useful in urinary tract infection prophylaxis.

Cranberry (*Vaccinium macrocarpon*) is a North-American

folk remedy for treating and preventing infection. Research has identified an anti-adhesive mechanism of cranberry-proanthocyanidins that inhibit docking of bacteria on tissues “in vitro”. Cranberries contain two compounds with anti-adherence properties, which prevent fimbriated *E. coli* from adhering to uroepithelial cells in the urinary tract. This mechanism can be traced in the patient’s urine following oral intake of cranberry juice. The efficacy of cranberry juice and extracts as a prophylactic agent against recurrent urinary infections is well documented in women. The anti-adhesion effect of cranberry-proanthocyanidins can also be applied for treatment of other common diseases of bacterial pathogenesis, e.g. *Helicobacter pylori*-associated gastritis and dental caries/periodontal disease

A significant dose-dependent decrease in bacterial adherence in vitro is noted after the consumption of 108 and 36 mg of cranberry ($p < 0.001$). It has also been shown that *E. coli* strains have a reduced ability to kill *C. elegans* after growth in the urine of patients who consumed cranberry capsules.

Approximately a dozen clinical trials have been performed testing the effects of cranberries on the urinary tract. However, these trials have a number of apparent limitations. Most importantly, the trials have used a wide variety of cranberry products, such as cranberry juice concentrate, juice cocktail, and cranberry capsules, and have employed different dosing regimens. Further research is required to clarify unanswered questions regarding the role of cranberries in protecting against UTI in general and in women with anatomical abnormalities in particular.



For further information about Ocean Spray, its range of cranberry juice drinks and the health benefits of the cranberry, please visit www.oceanspray.com.au or call toll free on 1800 626 338. Ocean Spray also produces a free consumer brochure about cystitis- to request copies for your clinic/practice, please email annabel@undertowmedia.com

Conference Season 2008

by HP Dietz

Having attended both the ICS and IUGA meetings in 2008 I will summarise the data presented at these meetings.

Stress Incontinence: As regards the treatment of stress incontinence, at the moment the Monarc transobturator sling looks best, the TVT-O showing higher pain scores, due to the fact that it gets closer to a skin nerve on the inner thigh. The TVT may have advantages over transobturator slings in women with

low pressure urethras (‘ISD’). A long-term study from Denmark demonstrated what we already know: the IVS should no longer be used due to unacceptably high erosion rates of almost 9% at 4 to 5 years’ follow-up. Several authors tried to put the best positive spin on TVT secur results, but success rates are clearly lower than with conventional slings. It is not yet clear whether this also applies to the Mini-Arc (AMS). The oddest paper on SI treatment came from Italy, suggesting that we should implant small magnets

lateral to the urethra to effect closure.

As regards diagnostics most new information came from imaging studies. We presented data showing that stress incontinence is NOT associated with levator trauma, a counterintuitive result that will take a lot of explaining-, and the Charles University group from Prague showed that TVT and TVT-O have a similar effect on the anatomy of the urethra and bladder neck.

Detrusor overactivity: Industry- funded and/or -controlled studies were rated very low by the ICS Scientific committee. As a result there wasn't even a full session on the overactive bladder in Cairo, and only one oral paper on anticholinergics. At IUGA things were a bit more like in the old days. Some OAB papers were obvious marketing with minimal scientific content. The latest drug on the market is Fesoterodine (Pfizer), but in the absence of comparative studies it's hard to say whether it's any better than others. Interestingly one of the oldest drugs, Trosipium chloride, was found to have the highest continuation rate in a large Danish study using a pharmaco- epidemiological database.

Several reports showed that Botox is a valuable option in women with OAB symptoms, even if DO was not confirmed urodynamically, and at ICS a European consensus report was presented, suggesting that Botox can be recommended in women with non-neurogenic DO if the patient is prepared to self-catheterize.

An issue of special interest to me was tackled by Lore Schierlitz from Melbourne: at 6 months postoperatively both TVT and Monarc have a positive effect on urgency, but unfortunately not on urge incontinence. Another interesting paper from Jonathan Duckett (UK) showed that resolution of OAB symptoms after prolapse repair is associated with improved flow rates, supporting the idea that urethral obstruction due to prolapse can be a reversible cause of bladder overactivity in women.

Prolapse: A very interesting paper from Singapore demonstrated a high rate of hydronephrosis in prolapse patients (about 20%). Rane Thakar from London presented a RCT of total versus subtotal abdominal hysterectomy, showing that leaving the cervix at hysterectomy has no major disadvantages. Our own unit presented a paper showing that the degree of distension of the puborectalis muscle during childbirth varies enormously

from one patient to another. Such findings suggest that computer modelling of the pelvic floor is quite useless as such modelling is usually based on one individual's CT or MR data. Other abstracts presented by our unit dealt with tomographic ultrasound of the pelvic floor, the diagnosis of levator trauma by 2D ultrasound, and the effect of childbirth on levator hiatal dimensions. One of our overseas visiting Fellows, Zeelha Abdool, presented a very well received ICS podium presentation on the effect of avulsion on hiatal dimensions, a paper that has since been accepted by the American Journal of O/G. Norwegian colleagues trained by our unit presented a study comparing 3D ultrasound and MR imaging of the levator ani, showing a high degree of agreement.

The treatment of prolapse with mesh implants was a major focus of IUGA. In general, success rates after transobturator meshes such as the Perigee and anterior Prolift seem high. Total mesh repair techniques such as the total Prolift, and posterior mesh repair techniques, are associated with erosion rates of about 8-12% over 3 years in very credible French data. There is a perception, voiced by several authors, that mesh 'shrinkage' or 'retraction' or 'contraction' is responsible for complications such as erosion and pain syndromes. This perception stems from ultrasound studies showing mesh that appears folded or markedly shorter than it was prior to implantation. This is a common observation as more and more units are using ultrasound to assess patients postoperatively. To date however there is no longitudinal data on mesh dimensions, a project we're currently working on. My hypothesis is that mesh 'retraction' or 'shrinkage' is uncommon, and that appearances on imaging are usually due to surgical technique.

It is appropriate to close with the issue of mesh surgery since it is likely that we'll hear much more about mesh complications in the near future. In Cairo a former editor of the 'International Urogynecology Journal', Donald Ostergard, held a keynote speech that was highly critical of mesh use and predicted class action against companies producing mesh implants and malpractice suits against physicians. There seems to be a lot of animosity between those who see mesh as a panacea, and those who feel that mesh is a time bomb. Most likely the truth is somewhere in the middle. I personally feel that there are forms of prolapse (those due to severe levator trauma or excessive distensibility of the pelvic floor muscle) that are not currently curable without mesh. The key, as always, is a proper diagnostic work-up.

Who are 'Sydney Urodynamic Centres'?

Sydney Urodynamic Centres has been providing the women of New South Wales and their doctors with a comprehensive urodynamic service for the past 20 years. They are able to scientifically assess female urinary incontinence and lower urinary tract dysfunction, provide an accurate diagnosis to the referring doctor and advise on clinical management.

The service is run by three urogynaecologists, trained and accredited in this sub-specialty by the Royal Australian and New Zealand College of Obstetricians and Gynaecologist (RANZCOG). These partners are assisted by a group of highly trained nurses who are adept at making the experience more pleasant for the women. There are seven centres around Sydney where studies can be performed in order to facilitate easy access to the service for most women.

These locations are:

SYDNEY

Sydney Urodynamic Centre
Level 3, 139 Macquarie Street, Sydney

CHATSWOOD

North Shore Urodynamic Centre
Suite 70, Chatswood Village
47 Neridah Street, Chatswood

CAMPERDOWN

Camperdown Urodynamic Centre
Suite 404, RPAH Medical Centre
100 Carillon Avenue, Newtown

CONCORD

Concord Urodynamic Centre
Level 2, Concord Hospital Medical Centre
209 Hospital Road, Concord West

BANKSTOWN

Bankstown Urodynamic Centre
Suite 2, Level 1, 56 Kitchener Parade, Bankstown

LIVERPOOL

Liverpool Urodynamic Centre
Suite 20, 2nd Floor, 17 Moore Street, Liverpool

PENRITH

Penrith Urodynamic Centre
Nepean Private Specialist Centre
Suite 1, 1A Barber Avenue, Penrith

For all appointments call (02) 9790 6969

Professor Hans Peter Dietz

MD PhD FRANZCOG DDU CU

Dr Dietz graduated from Heidelberg University, Germany, in 1988. After first immigrating to New Zealand, he arrived in Australia in 1997 and completed his FRANZCOG training in 1998.



Between 1999 and 2002, Dr Dietz undertook urogynaecology subspecialty training in Sydney, in addition to presenting a PhD thesis at UNSW. Dr Dietz's major research interests include the interaction between pelvic floor biomechanics and childbirth, pelvic floor imaging, and the effects of anti-incontinence surgery on anatomy and voiding function. He is Editor of the Australian and New Zealand Continence Journal and Associate Editor of the Australian and New Zealand Journal of Obstetrics and Gynaecology.

In 2008 he was appointed Professor in Obstetrics & Gynaecology at the Nepean Clinical School, University of Sydney, whilst continuing as a specialist in urogynaecology at the Sydney Urodynamic Centre.

Associate Professor Christopher Benness

MBBS MD FRCOG FRANZCOG CU

Following graduation from Sydney University, Associate Professor Benness did his specialty and sub-specialty training in both Sydney and London. An accredited sub-specialist in urogynaecology with the RANZCOG, he is a trainer and examiner in this field. He is a senior specialist in gynaecology at the Royal Prince Alfred Hospital, where he is also Head of the Department of Urogynaecology and a past Chairman of the Medical Board. He is the current Chairman of the NSW State Committee of RANZCOG. He is active in both teaching and research, and is a Clinical Associate Professor at the University of Sydney. His main research interests are improving surgical procedures for stress incontinence and prolapse.



Professor Andrew Korda

MA MHL MB BS FRCOG FRANZCOG CU FACLM

Following graduation from Sydney University, Dr Korda did his specialty training at the Royal Prince Alfred Hospital in Sydney, with further training in Oxford, United Kingdom and New York in the United States.



Dr Korda is an accredited subspecialist in urogynaecology, pelvic floor disorders and reconstructive pelvic surgery. Dr Korda is a senior specialist in gynaecology at the Royal Prince Alfred Hospital where he is Chairman of the Pelvic Floor Unit. He is a clinical lecturer in gynaecology at the University of Sydney and he is involved in both teaching and research. He is trustee of the Australian Bladder Foundation, and is Professor of Obstetrics and Gynaecology at the University of Western Sydney.

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