

| Start | End | Topic                                           | Speakers            |
|-------|-----|-------------------------------------------------|---------------------|
|       |     | Introduction                                    | Russ Chess-Williams |
|       |     | Fighting bladder infections: nature at its best | Kylie Mansfield     |
|       |     | Phytoestrogens and saw palmetto                 | Betty Exintaris     |
|       |     | Chinese herbs: active drugs or placebos?        | Russ Chess-Williams |
|       |     | Lubricin: a slippery solution                   | Donna Sellers       |
|       |     | Questions                                       | All                 |

### **Aims of Workshop**

The aim of this workshop is to discuss the natural products that are being used to treat urinary incontinence, including Chinese herbal remedies and plant extracts such as phytoestrogens and saw palmetto. The main objective is to provide an understanding of the mechanisms of action of these natural products, their adverse effects and their interactions with other drugs. The workshop will also cover other treatments such as cranberries as natural products to reduce catheter infections. Finally, lubricin, a natural product will be presented as a potential alternative treatment on the horizon. The workshop will use interactive online polling, quizzes and Q&A.

### **Learning Objectives**

To weigh the evidence for efficacy of common natural products used in treating urinary disorders.

### **Target Audience**

Pure and Applied Science

### **Advanced/Basic**

Basic

### **Suggested Learning before Workshop Attendance**

[1] Chughtai et al (2013) Use of Herbal Supplements for Overactive Bladder. *Rev Urol* 15(3):93-96.

[2] Schloss, J et al. (2019) A randomised, double-blind, placebo controlled clinical trial assessing the efficacy of bedtime buddy for the treatment of nocturnal enuresis in children. *BMC Pediatrics* 19:421.

[3] [www.nccih.nih.gov/health/saw-palmetto](http://www.nccih.nih.gov/health/saw-palmetto)

### **Fighting bladder infections: nature at its best**

**Kylie Mansfield, University of Wollongong**

Urinary tract infections are amongst the most common infections with many women experiencing debilitating recurrent urinary tract infections multiple times each year. In an effort to reduce the number of antibiotics they consume many people with recurrent urinary tract infections turn to more natural means to prevent their infections. In this section of the workshop we will discuss the natural approaches to preventing urinary tract infections including the use of cranberry. We will explore recent research to determine the effectiveness and proposed mechanisms of cranberry in preventing bacterial adhesion to the urinary tract. We will examine the studies comparing the effectiveness of cranberry against acute or recurrent urinary tract infections. We will also discuss the benefits of vaginal estrogen creams in post-menopausal women and how these can also prevent urinary tract infections.

### **Phytoestrogens and Saw Palmetto**

**Betty Exintaris, Monash University**

Patients may choose to use natural products based on the notion that they can effectively manage their urological conditions while avoiding some of the side effects associated with prescription medications. Phytoestrogens are considered a 'natural' form of oestrogen and alternative to hormone replacement therapy in effectively managing the symptoms associated with menopause. Phytoestrogens may also have a beneficial effect in managing urinary incontinence, however there is also evidence to suggest that phytoestrogens may worsen the symptoms or have no effect at all. Saw Palmetto has been used as a safe and effective treatment to manage the lower urinary tract symptoms associated with bladder outlet obstruction in males. In this section of the workshop, we will explore recent research to determine the effectiveness and proposed pharmacological mechanisms of various phytoestrogens and formulations of saw palmetto in managing symptoms associated with incontinence and bladder outlet obstruction. We will discuss the benefits and possible adverse effects of phytoestrogens and saw palmetto as well as the reliability of these studies.

## **Chinese Herbs: Active Drugs or Placebos?**

**Iris Lim, Bond University**

Herbal medicine has been traditionally used to treat symptoms of overactive bladder and urinary incontinence. Previous and emerging clinical research suggest that the use of some plant-based medicines is effective for improving lower urinary tract symptoms, often without the side effects that are associated with prescription medications. The herbal formulation Urox<sup>®</sup> was listed safe for human consumption by the Australian Therapeutic Goods Administration in 2011. Since then, several clinical trials have reported that Urox<sup>®</sup> reduces overactive bladder and urinary incontinence symptoms including urinary frequency, nocturia, urgency and stress incontinence in adults. In this section of the workshop, we will explore findings from animal and human studies on the effectiveness and proposed pharmacological mechanisms of Urox<sup>®</sup> and other herbal medications in managing bladder conditions. We will also discuss the reliability of these studies and some difficulties associated with investigating these herbal medicines.

## **Lubricin: a Slippery solution**

**Donna Sellers, Bond University**

This final section of the workshop will take a brief look at intravesical glycosaminoglycan (GAG) layer replacement of the bladder urothelium, as a treatment for interstitial cystitis and bladder pain syndrome. The proposed mechanisms of action and the evidence for the efficacy of the currently used agents will be discussed, such as hyaluronic acid, chondroitin sulphate, heparin and combination therapies. Lubricin (proteoglycan 4, PRG4) will also be presented as a potential alternative treatment on the horizon to restore urothelial bladder function and reduce inflammation. Lubricin is the natural lubricant in joints and is thought of as 'Mother Nature's lubricant' or a biologic Teflon<sup>®</sup>. It is found in the knee, eye and is widespread in the human body. It's ability to trap water, cushion, coat and repel provides anti-friction, anti-adhesive and anti-inflammatory properties, and this has led to lubricin being in clinical trials for dry eye and dry mouth. Pre-clinical experimental data demonstrates restoration of urothelium barrier function and penetration of the GAG layer following intravesical lubricin treatment, supporting its potential for use in the bladder.