• Theoria: Mirabegron — promising new drug for overactive bladder syndrome
  *Rigby D*

• The Revised Urinary Incontinence Scale: a clinical validation
  *Sansoni JE, Hawthorne GE, Marosszeky N & Fleming G*

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Theoria: Mirabegron — promising new drug for overactive bladder syndrome 40

The Revised Urinary Incontinence Scale: a clinical validation 43

Paediatrics: Nocturnal enuresis, daytime urinary and faecal incontinence in children with special needs 54

Journal watch 60

Australian news 64

New Zealand news 65

Calendar 66

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Contents
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Articles may be papers for peer review, clinical updates, case studies or evaluation of programs.

Do you need topic ideas? A variety of topics are possible and include, but are not limited to: outcome studies, aged care, paediatrics, the management and treatment of incontinence and continence health promotion.

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Articles may be papers for peer review, clinical updates, case studies or evaluation of programs.

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Help your patients with overactive bladder achieve better quality of life*

Help your patients with overactive bladder achieve better quality of life*

*Oxytrol improves health-related quality of life – statistically significant improvement in 9/10 HRQoL domains.
Theoria

Mirabegron — promising new drug for overactive bladder syndrome

Antimuscarinic, also called anticholinergic, medications are the mainstay of pharmacological treatment for urinary incontinence (UI) and overactive bladder (OAB) syndrome. These medicines reduce urinary frequency, urgency symptoms, and episodes of UI. However, their use is often limited by troublesome adverse effects, particularly for older people. Many patients discontinue therapy due to these adverse effects such as dry mouth, constipation, or mental effects. Dry mouth is reported in about 30% of patients. Higher cumulative use of medicines with anticholinergic effects is associated with an increased risk for dementia. Minimising exposure to these medicines among older adults can be justified because no evidence from controlled trials supports the hypothesis that de-prescribing these medicines reverses cognitive decline once it occurs.

Antimuscarinic medications exert their action by antagonism of muscarinic M3 receptors, increasing detrusor muscle relaxation, and by antagonism of muscarinic M1 receptors, decreasing bladder contraction. Mirabegron is a selective beta-3-adrenoceptor agonist, a new class of agent with licensed indications in Australia for the treatment of UI and OAB syndrome. It has a different mechanism of action and safety profile to antimuscarinic medications. Mirabegron induces detrusor muscle relaxation, resulting in increased bladder storage capacity. It has no significant effect on the strength of detrusor contraction during voiding. This may be an advantage for men with bladder outlet obstruction and lower urinary tract symptoms (LUTS).

Mirabegron is available as 25 mg and 50 mg prolonged release tablets. The recommended starting dose is 25 mg/day, increasing to a maximum of 50 mg/day. Mirabegron has not been studied in patients with severe renal or hepatic impairment and it is not recommended for use in this patient population. Several large randomised controlled trials, both short-term, 12 weeks and of relatively long-term, up to one year, have evaluated the safety, tolerability and efficacy of mirabegron. Importantly, these trials have evaluated efficacy and tolerability in patients over 65 and 75 years of age as well as younger patients. The efficacy and safety of mirabegron in children has not been reported.

The SCORPIO® and TAURUS® trials provide head-to-head evaluations with an active control arm of tolterodine ER. Improvements, from baseline in the mean number of incontinence and micturition episodes and the number of urgency and urgency incontinence episodes, were seen as early as after four weeks of use, and maintained for 12 months. While differences in efficacy compared to the active comparator were not shown, the real difference from a patient perspective is in the better safety and tolerability profile. Mirabegron was well tolerated in the trials, including among older patients with OAB syndrome. The most common adverse effects of mirabegron include: hypertension, nasopharyngitis, urinary tract infection (UTI) and headache. However, the studies reported that the incidence of hypertension, headache, nasopharyngitis and UTI are similar for mirabegron 50 mg, placebo and tolterodine. Dry mouth has been reported by three- to fivefold more patients taking tolterodine compared to mirabegron 25 mg or 50 mg 1/2. Mirabegron may cause a small increase in blood pressure and heart rate. These increases are dose-dependent and in the trials were not associated with an increased incidence of cardiovascular events such as tachycardia or palpitation. The clinical significance of these observations is yet to be determined and may depend on the individual’s cardiovascular status. However, it may be prudent to monitor blood pressure during therapy. Trial data of therapeutic doses of mirabegron has not demonstrated clinically relevant QT prolongation; however, patients with known QT prolongation, or patients who were taking medicines known to prolong the QT interval, were excluded from trials.

There is potential for adverse drug interactions between mirabegron and other medicines metabolised by the liver enzyme CYP3D6, such as imipramine, metoprolol, flecainide and perhexiline. Patients prescribed mirabegron may benefit from a pharmacist-conducted medication review to identify and determine the clinical significance of drug interactions. As with any new class of medicine, we need to consider where it fits with current therapy, especially as there is relatively limited comparative and long-term efficacy data available. Mirabegron might be used in patients who are intolerant or poor responders to antimuscarinic medications. Mirabegron might also be used as first-line treatment if anticholinergics are contraindicated, and may become a first-line option for the treatment of patients with cognitive impairment. As dry mouth is a common factor determining persistence with antimuscarinic medications, the lower incidence with mirabegron may be appealing to patients.

In summary, clinical trial data suggests that mirabegron provides efficacy similar to antimuscarinic medications, with an improved tolerability profile, regardless of age. The literature is still limited, and at present it has not been shown to be superior to antimuscarinic agents. Mirabegron has a potential advantage in the older population with dementia and cognitive impairment, however, this difference should be balanced against the risk of cardiovascular adverse events. Future use may lie with using low dose mirabegron in combination with low-dose antimuscarinic medications to raise efficacy while lowering the incidence of adverse effects. Further use in practice of this new class of medication will inform us of its place in therapy. It is, therefore, important for practitioners and patients to report adverse drug events. At this point in time, mirabegron is a promising alternative to antimuscarinics in the treatment of OAB syndrome.

References


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Brisbane, QLD, Australia
Member ANZCJ Editorial Committee

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Keywords: Urinary incontinence, patient outcome assessment, instrument validation, outcomes evaluation.

Abstract

The Revised Urinary Incontinence Scale was developed as a short, psychometrically sound measure for epidemiological and outcomes research. The aims of the clinical evaluation reported here were to compare the validity and responsiveness of the Revised Urinary Incontinence Scale with other measures recommended by the International Continence Society and to establish interim cut-points for scores that correspond with condition severity as defined by patients, clinicians and other indicators. The participants were 167 consecutive female patients, recruited from seven Australian continence clinics, who completed questionnaires before and after continence treatment. Treatment could be: advice from a continence nurse, physiotherapy or surgery. Measures included the Revised Urinary Incontinence Scale, the International Consultation of Incontinence–Urinary Incontinence–Short Form, the Urogenital Distress Inventory-6 and the Incontinence Severity Index. Data after treatment were available from 86 participants. Cronbach’s alpha for the Revised Urinary Incontinence Scale was 0.70; 0.63 for the Urogynatal Distress Inventory-6; 0.61 for the International Consultation of Incontinence–Urinary Incontinence Short Form; and 0.50 for the Incontinence Severity Index. Test-retest reliabilities estimated by intra-class correlation coefficients were 0.77, 0.74, 0.67, and 0.76 respectively. All scales were responsive to change following treatment but the Urogenital Distress Inventory-6 and the Revised Urinary Incontinence Scale had larger effect sizes, the ratio of change to its standard deviation. The Revised Urinary Incontinence Scale was strongly associated with other incontinence measures and it had evaluative discrimination when compared with other indicators of incontinence severity. The Revised Urinary Incontinence Scale is a short, reliable and valid scale for evaluation of urinary incontinence and its response to treatment.

Keywords: Urinary incontinence, patient outcome assessment, instrument validation, outcomes evaluation.
The aims of the study reported here were to evaluate the validity and responsiveness of the RUIS in a clinical setting and to suggest cut-points for RUIS scores that correspond with condition severity as defined by patients, clinicians and other indicators.

Methods
Participants were 167 consecutively recruited female patients from seven Australian hospital and community continence clinics. Participants were recruited if: they attended a clinic to receive treatment for UI; they were aged between 18 and 85 years, and had English fluency sufficient to complete a self-report questionnaire. All participants completed data collection before treatment, 86 completed data collection after treatment, and a further 60 participants completed a re-test survey two weeks after the completion of their post-treatment surveys.

The participants received treatment for this episode of care at the discretion of the treating clinicians and treatment could be: continence nurse advice, or physiotherapy, or surgery.

Pre-treatment data were collected through self-completion of the study questionnaire after consent and before the first clinic appointment. Post-treatment data were collected after treatment was compared using paired t-tests. Test-retest reliability was examined with the intraclass correlation coefficient (ICC).

The average period of treatment was four months. Ttest-retest reliability was assessed by asking those participants who returned the post-treatment form. This was also returned in a pre-paid addressed envelope.

There was little missing data for the main UI measures and no differences and interpreted using Cohen’s suggested d criteria, or ‘great’. Table 2 shows the differences for all instrument scores in relation to levels of clinician- and patient-rated severity levels at baseline. All instruments, save for the UDI-6, also differed in relation to pad use and type of treatment.

Before treatment there were strong associations between the RUIS and the UDI-6 r=0.74, the ICIQ-UI-SF r=0.71, and the ISI r=0.74 (all p<0.01).

Internal consistency of UI instruments, measured by Cronbach’s α, was 0.77, UDI-6 0.74 for the ICIQ-UI-SF and 0.50 for the ISI. Test-retest ICCs for reliability were all of a similar magnitude; RUIS 0.77, UDI-6 0.74, ICIQ-UI-SF 0.67 and ISI 0.76.
Table 1: Demographics, health and incontinence status at baseline in comparison with RUIS scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Classifications</th>
<th>N (%)</th>
<th>RUIS mean (SD)</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age groups</td>
<td>Less than 40 yrs</td>
<td>18 (10.8)</td>
<td>11.72 (3.19)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40–49</td>
<td>35 (21.0)</td>
<td>10.81 (3.38)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50–59</td>
<td>41 (24.6)</td>
<td>11.07 (2.92)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60–69</td>
<td>45 (26.9)</td>
<td>10.56 (3.15)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>70 yrs or more</td>
<td>28 (16.8)</td>
<td>10.75 (3.38)</td>
<td>F = 0.48, df 4, 162; p&gt;0.05</td>
</tr>
<tr>
<td>Country of birth</td>
<td>Australia</td>
<td>109 (65.7)</td>
<td>10.91 (3.34)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>57 (34.3)</td>
<td>10.79 (2.83)</td>
<td>t = –0.23, df 164; p&gt;0.05</td>
</tr>
<tr>
<td>Labour force status</td>
<td>Labour force</td>
<td>67 (43.2)</td>
<td>11.19 (3.19)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Homemaker</td>
<td>32 (20.6)</td>
<td>11.00 (3.33)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retired</td>
<td>56 (36.1)</td>
<td>10.50 (3.05)</td>
<td>F = 0.75, df 2, 152; p&gt;0.05</td>
</tr>
<tr>
<td>Education status</td>
<td>&lt; Some High School</td>
<td>56 (33.7)</td>
<td>11.75 (3.16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completed High School</td>
<td>42 (25.3)</td>
<td>10.45 (2.93)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade qual</td>
<td>36 (21.6)</td>
<td>10.69 (3.31)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>32 (19.2)</td>
<td>10.28 (3.25)</td>
<td>F = 2.10, df 3, 162; p&gt;0.05</td>
</tr>
<tr>
<td>Number of co-morbidities</td>
<td>0/1</td>
<td>48 (28.7)</td>
<td>11.23 (3.24)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2/3/4</td>
<td>83 (49.7)</td>
<td>10.61 (3.27)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5+</td>
<td>36 (21.6)</td>
<td>11.08 (2.90)</td>
<td>F = 0.62, df 2, 164; p&gt;0.05</td>
</tr>
<tr>
<td>General health status</td>
<td>Excellent/very good</td>
<td>66 (39.5)</td>
<td>10.52 (3.18)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>61 (36.5)</td>
<td>10.97 (3.07)</td>
<td></td>
</tr>
<tr>
<td>Symptom duration</td>
<td>Fair/poor</td>
<td>40 (24.0)</td>
<td>11.41 (3.34)</td>
<td>F = 1.04, df 2, 164; p&gt;0.05</td>
</tr>
<tr>
<td></td>
<td>Less than 2 years</td>
<td>48 (29.0)</td>
<td>10.58 (3.28)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 years</td>
<td>102 (60.8)</td>
<td>11.25 (3.02)</td>
<td>t = –1.24, df 148; p&gt;0.05</td>
</tr>
<tr>
<td>Clinician-rated UI severity</td>
<td>Mild</td>
<td>59 (35.3)</td>
<td>9.44 (2.93)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>82 (49.1)</td>
<td>11.57 (3.11)</td>
<td>F = 11.01, df 2, 164; p&gt;0.01</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>26 (15.6)</td>
<td>12.08 (2.84)</td>
<td></td>
</tr>
<tr>
<td>Patient-rated UI severity</td>
<td>Mild</td>
<td>59 (35.3)</td>
<td>8.51 (2.69)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>82 (49.4)</td>
<td>11.57 (3.11)</td>
<td>F = 11.01, df 2, 164; p&gt;0.01</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>25 (15.3)</td>
<td>14.21 (3.02)</td>
<td>F = 92.94, df 2, 92.65; p&lt;0.01</td>
</tr>
<tr>
<td>No. of UI leak symptoms</td>
<td>2 or less</td>
<td>60 (36.1)</td>
<td>8.80 (3.02)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 or 4</td>
<td>63 (38.0)</td>
<td>11.32 (2.62)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5+</td>
<td>43 (25.9)</td>
<td>13.09 (2.22)</td>
<td>F = 33.36, df 2, 163; p&lt;0.01</td>
</tr>
<tr>
<td>Type of incontinence</td>
<td>Stress only</td>
<td>51 (31.1)</td>
<td>10.65 (2.95)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urgency only</td>
<td>32 (19.5)</td>
<td>9.19 (2.76)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed incontinence</td>
<td>81 (49.4)</td>
<td>11.77 (3.19)</td>
<td>F = 8.54, df 2, 161; p&lt;0.01</td>
</tr>
<tr>
<td>Double Incontinence</td>
<td>UI only</td>
<td>130 (77.8)</td>
<td>10.58 (3.19)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UI and faecal</td>
<td>37 (22.2)</td>
<td>12.00 (2.92)</td>
<td>t = 2.42, df 165; p&lt;0.02</td>
</tr>
<tr>
<td>Social impact of UI</td>
<td>No social problem</td>
<td>39 (23.5)</td>
<td>8.13 (2.65)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small problem</td>
<td>65 (39.2)</td>
<td>10.54 (2.76)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Major problem</td>
<td>62 (37.3)</td>
<td>12.95 (2.38)</td>
<td>F = 42.41, df 2, 163; p&lt;0.01</td>
</tr>
<tr>
<td>Change activities due to UI</td>
<td>Never/rarely</td>
<td>85 (51.2)</td>
<td>9.26 (2.89)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>52 (31.3)</td>
<td>12.21 (2.29)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most/all of the time</td>
<td>29 (17.5)</td>
<td>13.21 (2.82)</td>
<td>F = 12.36, df 2, 163; p&lt;0.01</td>
</tr>
</tbody>
</table>

Table 2: Baseline comparisons between UI instrument scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Clinician-rated incontinence severity</th>
<th>N</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUIS</td>
<td>Mild</td>
<td>N = 59</td>
<td>9.44 (2.93)</td>
</tr>
<tr>
<td></td>
<td>Moderate/severe</td>
<td>N = 108</td>
<td>11.69 (3.04)</td>
</tr>
<tr>
<td>UDI-6</td>
<td>Mild</td>
<td>N = 59</td>
<td>7.64 (3.19)</td>
</tr>
<tr>
<td></td>
<td>Moderate/severe</td>
<td>N = 108</td>
<td>9.65 (3.39)</td>
</tr>
<tr>
<td>ICIQ-UI-SF</td>
<td>Mild</td>
<td>N = 57</td>
<td>9.30 (4.21)</td>
</tr>
<tr>
<td></td>
<td>Moderate/severe</td>
<td>N = 106</td>
<td>12.10 (4.48)</td>
</tr>
<tr>
<td>ISI</td>
<td>Mild</td>
<td>N = 59</td>
<td>4.90 (2.75)</td>
</tr>
<tr>
<td></td>
<td>Moderate/severe</td>
<td>N = 108</td>
<td>6.98 (3.45)</td>
</tr>
</tbody>
</table>

Table 2: Baseline comparisons between UI instrument scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>RUIS</th>
<th>N</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pad use</td>
<td>N &lt; 1 pad per day</td>
<td>N = 32</td>
<td>8.63 (3.13)</td>
</tr>
<tr>
<td></td>
<td>N ≥ 1 pad per day</td>
<td>N = 134</td>
<td>11.41 (2.95)</td>
</tr>
<tr>
<td>UDI</td>
<td>N &lt; 1 pad per day</td>
<td>N = 32</td>
<td>7.88 (3.41)</td>
</tr>
<tr>
<td></td>
<td>N ≥ 1 pad per day</td>
<td>N = 134</td>
<td>9.18 (3.43)</td>
</tr>
<tr>
<td>ICIQ-UI-SF</td>
<td>N &lt; 1 pad per day</td>
<td>N = 32</td>
<td>7.41 (2.65)</td>
</tr>
<tr>
<td></td>
<td>N ≥ 1 pad per day</td>
<td>N = 110</td>
<td>11.99 (4.49)</td>
</tr>
<tr>
<td>ISI</td>
<td>N &lt; 1 pad per day</td>
<td>N = 32</td>
<td>4.25 (3.31)</td>
</tr>
<tr>
<td></td>
<td>N ≥ 1 pad per day</td>
<td>N = 134</td>
<td>6.71 (3.22)</td>
</tr>
</tbody>
</table>

Legend: RUIS=Revised Urinary Incontinence Scale; UI=urinary incontinence
PCA of the RUIS identified one large component which explained 46% of the variance of the RUIS and this was interpreted as ‘general urinary leakage’. All RUIS items had factor loadings above 0.6 on this component, indicating a moderate to high average level of component saturation. Factor loadings from analyses of a broader set of UI items for both the community and this clinical setting are shown in Table 3. The pattern and magnitude of RUIS item factor loadings are similar across these settings.

The differences between PROM scores, before and after treatment, are shown in Table 4. All the instruments are scaled so that a negative change score means an improvement in UI. All instruments showed a large and statistically significant change in scores. Change scores on the RUIS ranged from −15 (improvement) to +8 (deterioration). Expressed as ES, the score change in RUIS was −1.33, UDI-6 ES=−0.94, ICIQ-UI-SF ES=−0.80.

Before treatment, the mean RUIS score for participants who wore no pad daily was 8.63 compared to 11.41 for those who used one or more pads daily. This suggests that a useful cut-point based on a behavioural anchor is a RUIS score of less than 9 as this may distinguish between patients whose incontinence was not sufficiently severe to wear a daily pad (mild) and those who wore pads daily (moderate to severe). Similarly, a cut-point score of ≥12 is consistent with the wearing of multiple daily pads.

At baseline, those with RUIS scores >9 were nearly six times more likely to be evaluated as incontinent on daily pads or more compared with those with a RUIS score <9. The estimated relative risk was 5.71 (95% CI 2.24 to 14.6).

Table 4: Post-treatment UI scores in relation to other incontinence variables at follow-up

<table>
<thead>
<tr>
<th>RUIS change scores by baseline patient-rated severity</th>
<th>N</th>
<th>Mean (SD)</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-treatment N = 86</td>
<td>11.02 (3.13)</td>
<td>F = 118.59, df 2,83; p &lt; 0.01</td>
<td></td>
</tr>
<tr>
<td>Post-treatment N = 85</td>
<td>6.91 (4.82)</td>
<td>F = 20.36, df 2,81; p &lt; 0.01</td>
<td></td>
</tr>
<tr>
<td>Mean change score</td>
<td>4.12 (4.88)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 7.82, df 85; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>UDI-6 treatment change*</td>
<td>Pre-treatment N = 86</td>
<td>8.87 (5.63)</td>
<td></td>
</tr>
<tr>
<td>Post-treatment N = 86</td>
<td>5.47 (4.07)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 8.41, df 85; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Mean change score</td>
<td>3.41 (1.76)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 6.27, df 84; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>ICIQ-SF treatment change</td>
<td>Pre-treatment N = 85</td>
<td>11.64 (4.13)</td>
<td></td>
</tr>
<tr>
<td>Post-treatment N = 85</td>
<td>8.06 (4.92)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 5.93, df 85; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Mean change score</td>
<td>3.58 (2.26)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 6.27, df 84; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>ISI treatment change</td>
<td>Pre-treatment N = 86</td>
<td>6.35 (3.12)</td>
<td></td>
</tr>
<tr>
<td>Post-treatment N = 86</td>
<td>3.70 (2.67)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 4.15, df 85; p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Mean change score</td>
<td>2.65 (4.15)</td>
<td>t&lt;sub&gt;p&lt;/sub&gt; = 5.93, df 85; p&lt;0.01</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Rotated factor matrices for a broader range of urinary incontinence items, community and clinical samples

<table>
<thead>
<tr>
<th>Community survey</th>
<th>Community survey</th>
<th>Clinical survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td>Factor/Component</td>
<td>Factor/Component</td>
</tr>
<tr>
<td>Frequency urination</td>
<td>0.88</td>
<td>0.49</td>
</tr>
<tr>
<td>Urgency leakage*</td>
<td>0.75</td>
<td>0.39</td>
</tr>
<tr>
<td>Stress leakage*</td>
<td>0.82</td>
<td>0.83</td>
</tr>
<tr>
<td>Leak small amount*</td>
<td>0.85</td>
<td>0.75</td>
</tr>
<tr>
<td>Emptying bladder</td>
<td>0.76</td>
<td>0.82</td>
</tr>
<tr>
<td>Pain lower abdominal</td>
<td>0.65</td>
<td>0.78</td>
</tr>
<tr>
<td>Leakage frequency*</td>
<td>0.89</td>
<td>0.89</td>
</tr>
<tr>
<td>Leakage amount*</td>
<td>0.89</td>
<td>0.88</td>
</tr>
</tbody>
</table>

* Revised Urinary Incontinence Scale (RUIS items)
Construct validity is strongly suggested in the comparison of the RUIS with other UI scales. The strong associations imply that the RUIS is highly consistent with the other scales. This is not surprising as the RUIS items were drawn from the UDI-6 and ISI. Importantly, while this exceeds minimum standards for concurrent validation it is under the requirement for functional unity. The interpretation is that there is strong evidence of construct validity for the RUIS, but that it provides unique measurement which is not provided by the other measures. The internal structure of the RUIS was very similar to that produced in the earlier community survey study which is important as it suggests robustness across different study populations.

The internal consistency of the RUIS (α=0.70) meets minimum reliability standards, unlike the other UI measures assessed in this study. In community samples where samples are larger, and may be more homogeneous concerning UI, the internal consistency measures for all instruments are well above 0.70. However, if instruments are to be used in both settings establishing adequate internal consistency reliability across settings is important.

Based on the ES metric, the RUIS was more responsive than the ISI and the ICIQ-UI-SF and similarly responsive to changes over time in incontinence status as the UDI-6. The RUIS mean in this clinical sample, 10.90, is much higher than the mean score for females in a community sample, 2.47. This further supports the position that the RUIS possesses evidence of good discrimination.

Score differences on the RUIS by participant characteristics allowed for generation of suggested cut-points. Change scores following treatment were also anchored against changes in pad use. Although pad use may be partly a function of loudness, changes in RUIS scores were highly sensitive to changes in pad use, suggesting that the suggested cut-points may be useful in clinical practice. These interim cut-points need confirmation by further clinical studies which include comparisons with physiological assessments and other objective points need confirmation by further clinical studies which include comparisons with physiological assessments and other objective measurementSuite for ContinenceConditions.pdf.

Conclusion
The RUIS demonstrated evaluative discrimination between levels of incontinence severity. In this clinical sample the RUIS had superior internal consistency when compared with other short UI scales. It was more responsive than most comparator scales in detecting change in incontinence status following treatment. Although further validation is required, these findings suggest it could be considered by researchers, epidemiologists and clinicians requiring a short, reliable and valid scale of UI.

Acknowledgements
The authors thank Associate Professor Katherine M Moore, Dr Elizabeth Owen and Ms Pam Grootemat for their contributions and thank all clinics and the study participants for their cooperation.

References
Appendix 1: Revised Urinary Incontinence Scale

Over the past four weeks, did you experience and if so how much were you bothered by:

1. Urine leakage related to the feeling of urgency
   • Not at all 0
   • Slightly 1
   • Moderately 2
   • Greatly 3

2. Urine leakage related to physical activity, coughing or sneezing
   • Not at all 0
   • Slightly 1
   • Moderately 2
   • Greatly 3

3. Small amounts of urine leakage (drops)
   • Not at all 0
   • Slightly 1
   • Moderately 2
   • Greatly 3

4. How often do you experience urine leakage?
   • Never 0
   • Less than once a month 1
   • A few times a month 2
   • A few times a week 3
   • Every day and/or night 4

5. How much urine do you lose each time?
   • None 0
   • Drops 1
   • Small splashes 2
   • More 3

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Paediatrics

Nocturnal enuresis, daytime urinary and faecal incontinence in children with special needs

‘Special needs’ is an umbrella term referring to children who require additional medical, psychiatric, psychological and educational assistance. ‘Special needs’ include heterogeneous groups of physical and intellectual disabilities, as well as a wide variety of neuro-developmental disorders. Although there is a diverse range of disorders associated with children with special needs, a recent review concluded that children with special needs share a common condition, namely incontinence:

• All types of incontinence are more common in children with special needs than in children with typical development.

• There is a higher likelihood for incontinence to persist into adolescence and adulthood, and so become a chronic condition.

• Except for physical disability, caused by disorders such as cerebral palsy and spina bifida, most types of incontinence are functional and so are not caused by neurological or structural factors.

• Incontinence can have additive negative effect on the emotional state, self-esteem, and quality of life of children with special needs. It can affect the child’s own daily functioning as well as family activity.

Incontinence in children with special needs can be assessed by the same procedures and the same treatment modalities as for children with typical development, provided they are adapted to a child’s developmental level and behavioural characteristics are applied. However, many children with special needs do not receive the same quality of medical care as children with typical development because incontinence is often not diagnosed as it is considered to be a sub-problem of the underlying condition and to be of lesser relevance than other areas of concern. Often, professionals may not offer treatment and instead parents and caregivers will use disposable diapers to contain and manage incontinence.

These deficiencies could be alleviated by simple interventions. Van Laecke and colleagues report a cohort study of 111 children with urinary incontinence and disabilities. This study reported that only 9.9% of the children drank sufficient oral fluids. The simple interventions of increasing oral fluids and prescribing anticholinergic agents, when indicated, led to a dramatic reduction of incontinence. Other programs for both toilet training and incontinence treatment have been developed and specially tailored for children with special needs who are incontinent.

This paper aims to summarise recent selected published research on the topic of continence management, focusing on three groups of children with special needs: those who have an intellectual disability (ID), those diagnosed with autism spectrum disorders (ASD) and those diagnosed with attention-deficit/hyperactivity disorder (ADHD). The paper will follow the classification and recommendations of the International Children’s Continence Society (ICCS). Nocturnal enuresis (NE), daytime urinary incontinence (DUI), and faecal incontinence (FI) will be discussed in particular. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5)® and 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)® classification systems will also be referred to for some other disorders.

Intellectual disability

ID is defined by an intelligence quotient (IQ) less than 70 and is characterised by deficits in intellectual and adaptive functioning with an onset during the developmental period®. Four different levels of severity are usually described: mild ID, with an IQ between 50 and 69; moderate ID, with an IQ between 50 and 70; severe ID, with an IQ between 20 and 34, and profound ID with an IQ of less than 20. The prevalence of ID is around 3.4%, of which 80% have mild ID. Many different syndromes and disorders are associated with ID and prenatal genetic causes predominately.

In the best representative and population-based study to date, von Wendt and colleagues® reported the characteristics of two age groups with ID at age seven and 20 years, which are summarised in Table 1. It was concluded that:

• NE, DUI and FI are all much more common in children and young adults with ID than in their typically developing peers.

• The rates of NE, DUI and FI increase with decreasing IQ.

• NE, DUI and FI persist into adulthood in persons with an IQ of under 50, but not necessarily in those with mild ID.

In this population-based study the authors could not differentiate between different subtypes and syndromes. This has been the focus of more recent studies. Table 2 describes the rates of different types of incontinence experienced by those who have syndromes occurring at different levels of ID severity.

Mild ID to normal range IQ

Noonan syndrome (NS), an autosomal dominant neurodevelopmental disorder with a high phenotypic variability, is caused by mutations in several genes of the RAS-MAPK signalling pathways. Most persons diagnosed with NS have an average IQ and a third may have mild ID. Typical clinical signs are a short stature, characteristic facial features, congenital heart defects and skeletal anomalies. Symptoms include anxiety, obsessive-compulsive behaviour, attention deficit, impulsiveness and stubbornness. A study of 19 children, aged five to 17 years, and 10 adults, aged 18 to 48 years, (with an overall mean age of 15.3 years) and of whom 58.6% were male, reported the rates of incontinence were 14% for both NE and DUI, and 7% for FI. Incontinence rates dropped markedly from childhood, rates in the younger group of 22% for NE, 21% for DUI, and 6% for FI, through to adulthood only one adult reported FI.

Mild ID

Williams syndrome (WS), a neuro-developmental disorder, is caused by a microdeletion on chromosome 7q11.23. People diagnosed with WS share a characteristic pattern of dysmorphic facial features, connective tissue abnormality and cardiovascular disease. Symptoms include good verbal skills, friendly behaviour, feeding problems, hyperacusis, attention problems and anxiety disorders. In a study of 146 children, aged four to 17 years, and 96 adults, aged 18 to 59 years (overall mean age 18.6 years), of whom 51.2% were males, the overall rate of incontinence was 15.3 years) and of whom 58.6% were male, reported the rates of incontinence were 14% for both NE and DUI, and 7% for FI. Incontinence rates dropped markedly from childhood, rates in the younger group of 22% for NE, 21% for DUI, and 6% for FI, through to adulthood only one adult reported FI.

Moderate ID

Fragile-X syndrome (FXS) is the second most common genetic cause of ID and is usually associated with moderate ID. The population prevalence is 1 in 4000. The full mutation of the FMR1 gene on chromosome Xq27.3 leads to an increase of CGG triplet repeats and gene methylation. Clinical signs include: a long face, large ears and macroorchidia (large testicles). The behavioural phenotype encompasses ADHD, social anxiety, ASD, and speech and language disorders. As described in Table 2 a study of 166 persons with FXS (92% male), a third were affected by NE, DUI or FI.

Severe ID

Angelman Syndrome (AS), a neuro-developmental disorder associated with severe ID, is caused by an absence or malfunctioning of expression of maternally imprinted genes at 15q11-13. Clinical signs include microcephaly, wide-smiling mouth, hypoglycaemia, axial hypotonia, limb hypertonia, and atypical gait. Typical symptoms are: epilepsy, motor and speech deficits, evocable and inappropriate laughter and sleep disturbances. In a study of persons diagnosed with AS (n=71; mean age 20.5, range six to 49 years, developmental age 1.4 years) and matched controls with severe ID without AS (n=75; mean age 22.9, range five to 48 years, developmental age 1.3 years) were compared®. As shown in Table 2, the rates of incontinence were very high but persons with AS had lower rates for DU than controls, especially in adults. While children with AS (between five and 12 years of age) had the same rate of DU as controls (90% compared to 87%); adults with AS (between 11 and 55 years of age) had less DU than controls (17% compared to 84%). This implies that adults with AS can be toilet-trained. Age, adaptive functioning and epilepsy were each significantly associated with incontinence. Overall, high rates of constipation, LUTS and urinary tract infections (UTIs) were present in this group.

Profound ID

Rett syndrome (RS) is a progressive neuro-developmental disorder associated with severe and profound ID. It is mainly caused by mutations of the MECP2 gene on the X chromosome. The facial appearance is not dysmorphic but developmental stagnation and regression are typical. Symptoms include: stereotyped hand movements, communication impairment, impaired or failing locomotion, seizures, breathing abnormalities
and scoliosis. A study comparing females with RS (n=63; mean age 19.3, range five to 47 years; adaptive functioning nine months) and matched controls without RS (n=26; mean age 19.3, range five to 47 years; adaptive functioning eight months) found that nearly all RS patients and controls were within the mild ID range (IQ 50–69). However, those with profound ID (IQ <20) had higher rates of incontinence. ADHD was present in 90% of those with ASD who had NE and 55% with DUI. In another study, 40 children with high functioning ASD (mean IQ 102.2, range 81 to 139; mean age 11.3 years) were compared to 41 controls (mean age 10.7 years) and those diagnosed with ASD showed increased rates of NE (30.0% compared to none) and DUI (25.0% compared to 4.7%).

Typical development

<table>
<thead>
<tr>
<th>Intellectual disability (ID) severity</th>
<th>Nocturnal enuresis</th>
<th>Daytime urinary incontinence</th>
<th>Faecal incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical development</td>
<td>21.6</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>All those with ID</td>
<td>22.9</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>Mild</td>
<td>17.6</td>
<td>64.3</td>
<td>71.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>19.1</td>
<td>23.8</td>
<td>18.6</td>
</tr>
<tr>
<td>Severe</td>
<td>78.6</td>
<td>64.3</td>
<td>71.1</td>
</tr>
<tr>
<td>Profound</td>
<td>38.1</td>
<td>39.0</td>
<td>30.5</td>
</tr>
<tr>
<td>Without Rett syndrome</td>
<td>19.3</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>Without Rett syndrome</td>
<td>21.6</td>
<td>94</td>
<td>96</td>
</tr>
</tbody>
</table>

* *Mild ID is defined as an intelligence quotient (IQ) of between 50 and 69; moderate ID as an IQ of between 35 and 49; severe ID as an IQ of less than 20.*

A study comparing females with RS (n=63; mean age 19.3, range five to 47 years; adaptive functioning nine months) and matched controls without RS (n=26; mean age 21.6 years, range five to 47 years, adaptive functioning eight months) found that nearly all RS patients and controls were within the mild ID range (IQ 50–69). However, those with profound ID (IQ <20) had higher rates of incontinence. ADHD was present in 90% of those with ASD who had NE and 55% with DUI. In another study, 40 children with high functioning ASD (mean IQ 102.2, range 81 to 139; mean age 11.3 years) were compared to 41 controls (mean age 10.7 years) and those diagnosed with ASD showed increased rates of NE (30.0% compared to none) and DUI (25.0% compared to 4.7%). Achievement of daytime bladder control in children aged over five years occurred in 80% of those with ASD, compared to all in the control group, and bowel control in children aged over four years occurred in 57.5% with ASD compared to 92.5% of the control group. The study noted that children with ASD had many other co-morbid psychological disorders and were highly incapacitated.

Incontinence in children with ASD is a major problem which may be overlooked in clinical practice and for which there is a lack of robust quantitative information. All children with ASD should be assessed for incontinence. Rates of incontinence in those with ASD are likely to be as high as children with ID, despite those with ASD having on average a much higher level of intelligence. Therefore, the concurrence of ADHD and incontinence is likely caused by non-genetic factors, possibly by interactions of neural networks18.

Based on genetic studies ADHD and NE, DUI and FI do not share the same genetic basis but are independent, separate entities. Therefore, the concurrence of ADHD and incontinence is likely caused by non-genetic factors, possibly by interactions of neural networks18.

Attention-deficit/hyperactivity disorder (ADHD)

Attention-deficit/hyperactivity disorder is a neuro-developmental disorder defined by the presence of persistent incapacitating symptoms of inattention, hyperactivity and impulsiveness. According to DSM-5, these have to present before the age of 12 years and are now defined by presentation as combined, predominantly inattentive, and predominantly hyperactive/impulsive presentations. Formerly, these were defined as sub-types in the DSM-IV. ADHD is much more common than ASD and affects 5% of all children. ADHD is mainly genetically determined with a heritability of 0.7.

Children with ADHD report incontinence at a higher rate than children without ADHD. There is a more extensive literature about incontinence and ADHD than that for incontinence and ASD or ID and the association has been the subject of a recent comprehensive review19. Most of the clinical studies in that review focused on the association of ADHD and NE; however, there was a very strong association between DUI and ADHD. In the Alsop study, which studied over 8000 children aged seven and a half years, ADHD was present in 17.6% of those with NE, 24.8% of those with DUI and 9.2% of those with FI19.

Based on genetic studies ADHD and NE, DUI and FI do not share the same genetic basis but are independent, separate entities. Therefore, the concurrence of ADHD and incontinence is likely caused by non-genetic factors, possibly by interactions of neural networks18.

Children with ADHD and NE, DUI and FI are more difficult to treat, show lower compliance and have less favourable treatment outcomes for incontinence19. A combined treatment approach, treating both the ADHD and the specific incontinence problem is needed to improve continence outcomes19. Because ADHD is such a common disorder that will be encountered in all paediatric treatment settings, the ICCS recommends screening for all
psychological disorders and not just ADHD in children with incontinence. The ICCS recommends managing widely applicable and validated parental questionnaires because of the high co-morbidity of behavioural disorders with incontinence, so that if symptoms are present, child psychological or psychiatric assessment can be instigated and followed, as indicated, by counselling and treatment5.

Conclusion
In conclusion, urinary incontinence is a major problem in all children with special needs. Optimum management requires an exact diagnosis of any existing neuro-developmental disorder and co-morbid conditions, as well as the specific type of incontinence. High-quality assessment and treatment of incontinence should be offered to children with special needs, regardless of a child’s developmental level. This is recognised in the ICCS definition of incontinence7, which defines incontinence in relation to age by a minimum chronological age of five years. This is more appropriate than the definition of the DSM-5 of both chronological age of five years or an equivalent developmental level5.

All children are entitled to optimal medical care, regardless of their intelligence and other abilities. Treatment of incontinence should be adapted to the individual child and include their specific behavioural patterns; sensory, speech, language and motor problems, their intelligence and other abilities. Treatment of incontinence should be adapted to the individual child and include their specific co-morbid disorders and their cognitive level. Achievement of the goal of individualised assessment and treatment requires integrated care and well-coordinated urologic, paediatric, psychiatric and psychological expertise and skills. Clearly a multidisciplinary team is best suited to manage this population.

References
The authors note that a strong relationship between diuretic use and urinary symptoms has been difficult to demonstrate. Between 5% and 35% of patients who take ACE inhibitors experience a cough and this can exacerbate symptoms of stress urinary incontinence. Increasingly, beta-blockers are used to treat heart failure and potentially can increase detrusor contractions by blocking the effect of beta-3 mediated bladder muscle relaxation. The authors note that antimuscarinic anticholinergic agents can potentially increase heart rate and possibly lead to cardiac arrhythmias.

In the final section of the paper the authors suggest some management considerations for the combination of heart failure and lower urinary tract symptoms. These include substituting ACE inhibitors with angiotensin receptor blockers (ARB) agents, when treating people who have symptoms of stress incontinence and cough, and introducing pelvic floor muscle training. Reducing or changing loop diuretics by the use of other heart failure agents or evaluating for other causes of oedema may also help. Shifting the doses of these agents away from afternoon or evening may help with nocturia.

An area of weakness in the paper is that as it is a narrative review there is no well-defined search strategy for the identified literature and no particular rating of the evidence that is described to support the recommendations.

Reference

A review of the evidence of pelvic floor muscle training during pregnancy

This paper reports a systematic review of the evidence about pelvic floor muscle training (PFMT) during pregnancy. It wasn’t completely clear from the paper itself why a meta-analysis wasn’t also done; although, reading between the lines, it is likely that the papers and reporting of results were so diverse that formal quantitative evaluation of the evidence was not particularly sensible.

The authors state that fitness and strength testing in general is recommended for women who are pregnant but noted that recommendations about strength training of the pelvic floor are not as well established. The stated aims of the review were to find: whether there is evidence that pregnant women should be advised to do PFMT to prevent or treat UI; evidence for

Mark Weatherall
Editor Australian and New Zealand Continence Journal
President New Zealand Continence Association
post-partum women, and whether there is a long-term effect of PFMT during pregnancy and after childbirth.

The paper reports a standard comprehensive literature review to mid-June 2012 for randomised controlled trials, or trials of a similar design, published in English or Scandinavian languages using a wide variety of keywords that were likely to capture research about the topics.

Ten RCTs and two long-term studies were identified about PFMT during pregnancy to prevent urinary incontinence. Most of these studies started exercise between 20 and 22 weeks of pregnancy and most had regular home training and follow-up with a physical therapist. Outcomes included important reduction of symptoms during late pregnancy and in the three months after delivery but longer term follow-up no differences between those given pregnancy exercises and those not.

For those women who already had urinary incontinence while pregnant there was some, but not as robust evidence, of improved continence. PFMT after delivery was addressed by five short-term and two long-term studies with training starting in hospital or at home some weeks later. Some of the studies showed improved continence outcomes.

The authors felt most of the studies were of good to very good quality and that training intensity (training to maximum strength contraction) may be the most useful part of a standard protocol of, for example, three sets of eight to 12 contractions three times to four times a week. The authors suggest a minimum eight-week training period. It was disappointing that this paper was not accompanied by a meta-analysis to better define outcomes.

Reference

External sacral magnetic stimulation to treat stress urinary incontinence

This report describes a randomised clinical trial of external magnetic stimulation of the sacral nerve roots compared to a sham procedure in women with stress urinary incontinence (SUI). The authors cover the background that neuromodulation, magnetic stimulation of the sacral nerve roots compared to a sham procedure, may be useful part of a standard protocol of contraction) may be the most useful part of a standard protocol of, for example, three sets of eight to 12 contractions three times to four times a week. The authors suggest a minimum eight-week training period. It was disappointing that this paper was not accompanied by a meta-analysis to better define outcomes.

Reference

Nominations sought for Peer-Review Panel

Experts from the disciplines involved in continence treatment, management and promotion and those who are expert in research methods and statistical analysis are invited to nominate to join the Australian and New Zealand Continence Journal Peer-Review Panel.

The journal is proud to promote Australian and New Zealand scholarship in the area of continence.

For details regarding the Peer-Review Panel, please email Jacinta Miller journal@continence.org.au

Efficacy of intravesical liposome contained butulinum toxin compared to normal saline for patients with overactive bladder

This report describes a randomised controlled trial of intravesical liposome contained butulinum toxin compared to normal saline for patients with overactive bladder as a proof-of-concept study.

The authors highlight that intravesical injection of butulinum toxin into the detrusor muscle is useful for overactive bladder symptoms that do not respond to antimuscarinic agents. The risks of intravesical injections are urinary tract infection and urinary retention. This might possibly be reduced (and the time for the administration reduced) if the toxin could be encapsulated in lipid particles (liposomes) and absorbed directly from the bladder rather than injected.

The participants in the study were men and women with symptoms of overactive bladder with a mean frequency of more than eight a day and urge or urge incontinence more than daily and who had taken anticholinergic agents without effect for four weeks or had intolerable side effects. It wasn’t clear exactly where the patients came from. They were recruited from two hospitals in Taiwan, with the lead authors working in urology departments. Patients needed to have no evidence of important urinary obstruction with urodynamically and no obvious nervous system disease. A total of 62 participants who were randomised with 29 in each of the two groups after four weeks but only 11 and 12 analysed after 12 weeks because the participants were allowed open-label treatment by this time.

The mean age of participants was around 65 years and about half were men. At baseline the mean (SD) episodes of urination over a three-day period was 38 (14) in the treatment group and 34 (10) in the control group.

The treatment was 200 U of onabotulinumtoxinA with 80 mg of phosphenylsymelig liposome administered via a 6 Fr catheter into the bladder, which was then clamped for 60 minutes. It was a little unclear the total volume of fluid, but it looks like it may have been 40 ml. The control group had saline instillation.

The main outcome was change in total number of micturition events per three days from baseline to four weeks together with a very large number of secondary outcome variables.

Although the authors present some summary descriptions of the outcomes, they present no point estimates and confidence intervals for comparisons between the two groups. There are some point estimates and confidence intervals presented for change from baseline for some of the secondary outcome variables. From the table of the main results the mean (SD) micturitions per three days was 32 (11) in the treatment group and 33 (13) in the placebo group after one month but the authors didn’t present the summaries for the change from baseline. The change from baseline was about 4.5 micturitions for the treatment and 0.2 for the control group. Post-void residual volume changes from baseline were similar between the two groups. For adverse events the authors state these weren’t different.

In their discussion the authors overstate that the new treatment improved aspects of overactive bladder based on some statistically significant changes from baseline but correctly say that larger treatment studies are needed. In addition, unless this treatment works well there is a danger that a very expensive agent could be instilled into the bladder and then expelled without a treatment consequence.

Reference
**Australian News**

**National Conference 2015**

Preparations for the 24th National Conference on Incontinence, in association with UGSA, are progressing well. International and national keynote speakers have been engaged to present at the conference, to be held at Melbourne’s Crown Conference Centre, 25-28 November. There is a comprehensive scientific program and a full program of workshops on topics that include: spinal neurogenic bladder, continence nursing practice standards, conservative management of pelvic organ prolapse and pelvic floor palpation with imaging.

Registrations will open in June. For more information and updates on the conference, go to the website www.continence.org.au, follow us on facebook.com/AusContinence, or twitter.com/AusContinence

**World Continence Week**

Preparations are well under way for next month's World Continence Week, 22–28 June.

This year’s theme — **Tell someone who cares** — encourages people affected by incontinence or those caring for someone with incontinence to seek help by phoning the National Continence Helpline (1800 33 00 66). The theme supports this year’s special interest, Carers count: support for continence management.

With the help of some of the state carer associations, existing continence resources for carers will be reviewed and considered again for the Carer project, Carers count: support for continence management, which will be launched during World Continence Week, along with a range of supporting resources.

Continence Foundation members are encouraged to assist with promotion of this important awareness event by ordering free resources, including a double-sided A3 poster. A resource order form is available online at www.continence.org.au/wcw

Please ensure that you place your order well in advance of World Continence Week to avoid any delays with delivery. An information kit comprising suggestions about how you can participate is also available.

Carers will focus on the practicalities of incontinence care, with information on incontinence. A new web page dedicated to resources to support family and friend carers to access key continence management resources will be launched during World Continence Week.

With the help of some of the state carer associations, existing continence resources for carers will be reviewed and considered again for reproduction.

**Australian Bladder Foundation grants**

The Australian Bladder Foundation (ABF) annual grants round provides an opportunity for health professionals working in, or with an interest in, continence management to apply for grants from the ABF. The 2015 grants round will be announced mid-year. For updates and more details, go to continence.org.au

**ACE**

The Australian Continence Exchange (ACE) now has more than 600 downloadable resources available to health professionals, as well as eight educational videos and access to past editions of the Australian and New Zealand Continence Journal. The website, www.continenceexchange.org.au, is a resource for health professionals to stay abreast of the latest news, events, resources and education opportunities in continence management.

Members of the ACE have the opportunity to suggest topics they would like to see developed as a video, along with an outline of issues to be covered. Please send your suggestions to Claudia Piscitelli via email to c.piscitelli@continence.org.au

You can also sign up to the ACE Newsletter [http://www.continenceexchange.org.au/pages/newsletter.html] to stay up to date with news and announcements regarding future ask the expert speakers.

ACE members, who have a continence-related resource to share on the ACE site, can upload documents and resources to the ACE website, URL: http://www.continenceexchange.org.au/pages/submit.html. ACE membership is free and allows for resources, news items and events to be promoted to all ACE members around Australia.

**Eduational opportunities**

The Continence Foundation’s national educational calendar is now online. To book events, or view other events, go to the website: www.continence.org.au/events, or phone 03 9347 2522.

**New Zealand News**

**We are delighted to let our members know that we have recently rebranded.**

Legally we will remain the New Zealand Continence Association but in the marketplace we will now be known as Continence NZ. There are a few reasons for this: for easier online searching, it is easier to say and look up, and it is more simplified. You will notice that most organisations have simplified their names like this and over the past few years I have noticed people referring to us as such because it has become a recognised format.

With the rebranding, we have also updated the look of our website. It is now simpler, cleaner and more modern, with new, updated colours to match the logo. The changeover will occur gradually as our resources are updated.

We had an excellent response to our education day in Auckland, with good attendance from both delegates and trade. We appreciate the trade support as this keeps the cost low for delegates. Once again using the Auckland Airport Domestic Terminal conference facility allowed people to fly in and out the same day, while also being practical for locals. We believe this is an excellent approach to education that works well.

A men’s health day will be held at the same venue on 20 November. For registration forms, email nzce@continence.org.nz

World Continence Week will soon be upon us, this year the dates are 22–28 June. The theme for 2015 is Incontinence Support for NZ Carers. As carers are a large group in the community, we would like everyone involved in community activities to support the initiative during that week. Information will be posted on the website as it comes to hand. See the information under ‘news and events’ at www.continence.org.nz

The Australian and New Zealand Continence Journal invites contributions from New Zealand researchers and clinicians. Please Kiwis, put your thinking caps on and consider what you might be able to submit to future editions. You will get full editorial support in your endeavours.

**Jan Zander**

**CEO NZCA**
Calendar of events 2015

9–13 June
ICGC 40th Annual Meeting
Nice, France
Web: http://pelvicpain-meeting.com

11–13 June
2nd World Conference on Abdominal and Pelvic Pain
International Pelvic Pain Society
Nice, France
Web: http://pelvicpain-meeting.com

18–21 June
96th World Congress of Gerontotechnology
Cultural and Social Diversity in Gerontotechnology
International Association of Gerontology and Geriatrics
Taipei Trade Center
Taipei, Taiwan

22–28 June
World Continence Week 2015
See the websites for local events:
www.continence.org.au
www.continence.org.nz

28–29 June
ICCS Grade 1 Course on Enuresis
ICCS, Japanese Society of Enuresis and Japanese Society of Pediatric Urology
Juroko Plaza in Gifu City, Japan
Web: http://iccs-jc.org/events/

17–20 August
Prostate Cancer World Congress 2015
Presented by Australian Prostate Cancer Research
Cains, QLD, Australia
Web: http://prostatecancercongress.org.au

31 August – 4 September
IAGS/ICAOA Joint International Global Ageing Conference
Perth, WA, Australia
Web: http://iaha.net/11th_International_Conference_Perth,_Australia.aspx

4–9 October
FIGO World Congress of Gynecology and Obstetrics
International Federation of Gynecology and Obstetrics (FIGO)
Vancouver, Canada
Web: http://figo2015.org/

6–9 October
45th Annual Meeting of the International Continence Society
Montreal, Canada
Web: www.iccs.org/2015

14–18 October
ICCS 2015 Annual Meeting
Prague, Czech Republic
Web: http://iccs-cz.org/

19–22 October
10th UGGG Asia/Oceania Regional Congress
International Association Gerontology and Geriatrics
Chiang Mai, Thailand
Web: http://ugggchiangma2015.com/

25–28 November
The 24th National Conference on Incontinence
Crown Conference Centre, Melbourne, VIC, Australia
Web: www.continence.org.au

Information for authors

Preparation of manuscripts

Manuscripts are to be no more than 4000 words and include an abstract of no more than 250 words. Manuscripts should be created in a Word document using minimal formatting and typed double spaced in 12 point Times Roman font. Include total word count and up to five keywords. Include title of work on the abstract page and first page of introduction. In the introduction, include key points on what is already known on the topic and what your manuscript contributes. Define abbreviations and acronyms on first mention in the text.

Tables are to be presented on separate pages, one per page. Tables should be clearly typed, showing columns and lines. Number

Information for authors

Ethics

Investigations in human and animal subjects must conform to accepted ethical standards. Authors must provide a statement within the text that the research protocol was approved by a suitably constituted ethics committee of the institution within which the work was carried out and that it conforms to the Statement on Human Experimentation or the Statement on Animal Experimentation by the NHMRC.

Manuscript type

The Australian and New Zealand Continence Journal welcomes original research articles for peer review and general articles regarding the achievements of people working in the disciplines pertaining to the management of incontinence, clinical issue updates, book reviews and general project information.

Discussion: Presentation of information from more than one viewpoint (for example, for and against) and usually ending with a recommendation or opinion based on the evidence presented.

Literature review: Narrative — describes and evaluates the current knowledge of a subject, identifies gaps or inconsistencies and includes critical evaluation with recommendations for future research. Systematic — describes planned analysis and evaluation of all available research studies on a particular clinical issue, conducted in accordance with scientific principles and may include recommendations for future research.

Research report: Presentation of study results in an ordered fashion, based on common practice. Research reports are expected to follow the Uniform requirements for manuscripts submitted to biomedical journals, as published by the International Council of Science Journal Editors www.icmje.org.

Case study: Combination of recount (retelling of events as they occurred) and information report (classification and description of something). Can be presented in different ways to give a cohesive account.

Exposition (including letter to the Editor): Putting forward of a particular viewpoint, justification of a particular argument.

Narrative: An informative account of a meeting or conference, or a review of a book, journal article or relevant website.
tables consecutively using Arabic numerals in the order of their first citation in the text and supply a brief title for each. Place explanatory matter in a legend under the table, not in the heading. Explain in the legend all non-standard abbreviations used in each table.

Photographs and figures may be included in the submission and should be supplied in a graphic format such as jpeg at a resolution of 300 dpi. Illustrations and figures must be clear, well-drawn and large enough to be legible when reproduced. The title and legend for figures should be on a separate page after the references. Each figure must include its place, its number and the orientation of figure. Patients or other individual subjects should not be identifiable from photos unless they have given written consent for their identity to be disclosed; this must be supplied.

**Revising guidelines**

The referencing format is based on the Vancouver style, the main feature of which is the use of numbers at the point of reference so as not to interfere with the flow of words. Each number corresponds to a single reference provided in the reference list at the end and, once assigned a number, a reference retains that number throughout the text, even if cited more than once. If more than one work is quoted in a reference, each work must be assigned a number. At any point in the text, the reference may be one or several numbers. Following are some examples of references from different sources:

**Journal:** A complete journal reference includes: name(s) of author(s), title of article, journal name, year of publication, volume and edition number and inclusive page numbers.


**Book:** A complete reference to a book includes: name(s) of author(s) or editor(s), book title, edition number, name of publisher, place of publication, year of publication, specific page numbers and internet reference if applicable.


It is the author’s responsibility to ensure that all references are correct. Please double check all citations with an electronic database to ensure accuracy in the reference list. Manuscripts submitted with multiple errors will be returned for correction before being accepted for peer review.

**Submission of manuscripts**

The *Australian and New Zealand Continence Journal*, in conjunction with Cambridge Publishing, now uses the world’s leading manuscript management system — ScholarOne. Submission of manuscripts for peer review will only be accepted via this online program. Reports and news can still be submitted to the production editor by email.

All tables, figures and photographs, as well as the main document and title page, are to be uploaded separately. Please ensure image files are uploaded as jpegs and are a MINIMUM of 500kb and no larger than 2mb in size. The manuscript may be accompanied by a Word document with tables, figures and photographs embedded so as to show the preferred positions of these. This separate file can be uploaded at step 4 as a cover letter.


To create an account when using the system for the first time, click on ‘Register here’ under ‘New User?’ in the middle right of the screen, or on ‘Create Account’ in the top right-hand side of the screen. Please enter as much information as possible when creating an account.

Once in the system, the steps to submit an article are:

Step 1: Manuscript type, title and abstract.

Step 2: Keywords — at least two are required, up to five allowed.

Step 3: Add co-author and edit your details (if necessary).

Step 4: Manuscript information and questions on funding, ethics, conflict of interest and copyright.

Step 5: Upload files.

Step 6: Review and submit.

The ANZCJ ScholarOne website has comprehensive guidelines and online tutorials to assist in using the system. Click on the orange ‘Get Help Now’ in the top right hand corner. A PDF of the Author Quick Start Guide can be downloaded after choosing ‘Author’ as your role.

**Peer review process**

All manuscripts are initially reviewed by the Editorial committee and those deemed unsuitable (insufficient originality, serious scientific or methodological flaws, or a message that is too specialised or of limited interest to the journal readership) are returned to the author(s), usually within four weeks. If the manuscript does not conform to the submission guidelines, the author will be asked to amend it prior to peer review.

All manuscripts are reviewed by content and writing peers for relevance, construction, flow, style and grammar. This process can take eight weeks. Reviewers spend considerable time in reviewing the manuscripts and providing feedback to the authors. The length of time of the publication process may vary and depends on the quality of the work submitted. Several revisions may be required to bring the manuscript to a standard acceptable for publication. The Editorial team undertake the final review and may have different questions for the author(s) to consider. Proofs of articles about to be published will be sent in PDF format to the corresponding author for review. The final decision about publication is made by the Editor.
Enriching lives

As the complex world evolves, health becomes ever more important to life. That’s why we are committed to creating innovative healthcare solutions so people can manage health simply and effectively.

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