



Urodynamics Committee Agenda

Tuesday 3rd September 2019,

Venue: Swedish Exhibition & Congress Centre

Room: [Meeting Room 3](#)

Time: 11.30-12.30

Chair: Enrico Finazzi Agro

Members: Michael Guralnick, Alex Digesu, Alexandre Fornari, Tufan Tarcin, Jian Wen, Luis Abranches Monteiro,

Unconfirmed: Eskinder Solomon,

Also in Attendance: Jenny Ellis, Sherif Mourad

1. Committee picture to be taken
2. Approval Philadelphia minutes (attached)
3. Committee Terms of Office (attached)
4. Committee Terms of Reference (attached) – Any changes required?
5. Reminder SOP process
6. Education Module Review (see attached annual report for full list)
7. Book on Urodynamics Update
8. AOB



Urodynamics Committee Minutes

Tuesday 28th August 2018,

Venue: Pennsylvania Convention Center (PCC)

Room: Meeting Room 1

Time: 15.30-16.30

Chair: Enrico Finazzi Agro

Members: Jian Wen, Alex Digesu, Alexandre Fornari, Eskinder Solomon, Luis Abranches Monteiro, Tufan Tarcn

Apologies: Michael Guralnick,

Also in Attendance: Jenny Ellis, Sherif Mourad

1. Committee picture to be taken

A committee picture was taken and will be uploaded to the committee page post meeting.

EFA welcomed everyone to the meeting. Everyone introduced themselves.

2. Approval Florence minutes (attached)

No changes or additions were requested. 1st AD, 2nd ES.

3. Committee Terms of Office (attached)

- Jian Wen and Alex Digesu stepping down in 2019

- Alexandre Fornari, Eskinder Solomon, Luis Abranches Monteiro, Tufan Tarcn– 1st term completed, will need to confirm if they wish to stand for a second term

AF, ES, LAM and TT all completed their first term. All requested to renew for a second term.

Action: Office to renew AF, ES, LAM and TT for a second term.

EFA advised that he had received an expression of interest from Maurizio Serati who is interested in joining the committee.



-Discuss whether to increase size of committee for continuity purposes. This would need Board approval.

EFA advised that two people need to be recruited next year – one gynaecologist and one nurse.

Group discussed about the specifics needed for the committee, JE suggested that the committee create a news article to outline what they are looking for. All agreed. ES thinks we should focus on engaging gynaecologists, as they are moving away from urodynamics.

Action: Committee to create a news article on the available committee positions.

4. Committee Terms of Reference (attached) – Any changes required?

Committee reviewed the TOR, only change noted was to remove “that” from sentence.

Action: Office to remove “that” from the last sentence, first paragraph in the TOR.

5. Outstanding Actions:

Action: Committee to review and discuss the link between the committee and the institute. The TOR may need to be changed based on these discussions.

TT asked how the institute differed from the committee? AD confirmed that the institute will be focused on creating content for the ICS eLearning platforms. Group discussed the type of content that will be created and how this links to the committees plans. All happy with the discussion.

Action: Committee to discuss possible strategies to make urodynamics look better/increase uptake of urodynamics.

AD confirmed that the Board are thinking about creating more standards and publishing them in NAU – like Marcus Drake’s supplement. The types of content would be e-pocket sized documents, eLearning standards – created to ensure minimal conflicts related to publishing of documents.

6. AOB

6.1 Teaching Modules

ICS teaching modules, see attached list. Some modules have been completed, two are near completion. Another forty-two are planned over the next year. All committee members will be involved in the modules. EFA advised that we would need to do a systematic review, but the content is moving quickly. We also need proposals for



systematic reviews. JE clarified whether an SOP was required for a systematic review? Group discussed the ICS SOP's, EFA asked JE to send the committee the ICS SOP's.

Action: Office to send all committee members the ICS SOP's.

TT confirmed that we have finished a number of teaching modules, now not sure which to start with. JE advised that the office can help prioritise the list.

Action: TT to discuss modules prioritise list with the office.

Group discussed the Turkish request to translate document. JE highlighted there is a process for translating documents, to ensure information is not lost in translation.

Postscript Note: TT confirmed that all published teaching modules have already been translated to Turkish by a professional translation company and further medical language correction and control has been carefully performed on these documents by a group of 3 board members of Turkish Continence Society (including me) and they are ready for distribution. We further received the copyright approval from Wiley so that we may use these only for educational and non-profit purpose in Turkey.

6.2 Urodynamics and Education joint project

EFA advised that he had been working with the education committee on a joint project – reviewing urodynamic course requests. Following the new process, all recognised courses must use the ICS content/slides at the meeting. There is concern that the course hosts are not using the official ICS content/information, we are therefore proposing to send a committee member to these new courses to check that the correct information is being provided to delegates. EFA has estimated that £5000 budget annually is required to cover travel costs for members to attend these courses. EFA will discuss this at the Trustee-Chair meeting tomorrow. EFA will confirm in due course.

Action: EFA to request £5000 from the Board for committee members to attend ICS recognised Urodynamics courses.

6.3 Workshop at ICS 2019

EFA would like to have a workshop at ICS 2019. This will be discussed further going forward.

Action: EFA to discuss ICS 2019 workshop with committee.

6.4 Urology News

EFA was approached by the office to submit an article on behalf of ICS. This has been



submitted and will be published later in the year. EFA thanks TT and LAM for his help with this document.

6.5. Future projects

It was suggested that the committee offer a urodynamics traces quality check. ES will be involved in this project. The proposal was received from Andrew Gammie in Bristol. This will be a new service that the ICS will offer. There will be a poll of reviewers to check trace quantities. Group discussed and expressed concern that this was a big project. EFA will look into this further and will provide an update to the committee in due course.

EFA proposed to publish a book on “practical urodynamics” with the Committee. This proposal will be further discussed and defined within the next year.

ENDS

ICS Urodynamics Committee Terms of Reference

1. PURPOSE:

The ICS Urodynamic Committee develops specific content for the training of good urodynamic practice as well as for the correct use and interpretation of urodynamic tests. The ICS-UC should provide this for basic and (very) advanced education, about the complete variety of diagnostic methods that applicable to diagnose LUT and pelvic floor function that has an ICS watermark and can be made available to all relevant persons.

2. FUNCTIONS:

To initiate and support the development and the maintenance of educational modules that are relevant for ICS. To guide ad-hoc working groups with an initiative to develop a future ICS teaching module, according to the ICS-UC manual (2010) or other documents (reviews, position papers, trials) useful for the purpose of the committee.

The educational materials for e-learning programs should be produced by the committee in agreement with the Institute of urodynamics.

3. RESPONSIBLE TO: ICS Board of Trustees and ICS General Secretary

4. COMPOSITION:

Total Members	Method of Appointment	Name	Term of Office
ICS General Secretary	Ex officio	See Membership Page	3 years
Chair:	Elected. A member must sign his/her agreement to stand. This nomination is signed by nominator and seconder, all being current ICS members. The nominee for Chair would be a current or recent member (past 5 years) of the Urodynamics Committee. If no one is nominated the ICS Nominations committee may suggest a suitable candidate. Nominations received by 1st March for current members all other applications by 1st April Voting regulations as stated.	See Membership Page	Term of office: 3 years, renewable once by Chair and committee consensus. Further terms could be approved in exceptional circumstances and by referral to the ICS Trustees.
Members:	All members of ICS committees must be active ICS members (paid for current membership year) (By-law 2.3.2)		3 years, renewable once by Chair/committee approval. Further terms could be approved in exceptional circumstances

			and by referral to the ICS Trustees.
Subcommittees	None		
Updated January 2016			

5. MEETINGS: One face-to-face meeting during the Annual Scientific meeting; Occasional gatherings during other congresses. All other deliberations and internal minutes will be circulated by email.

6. QUORUM: One third of committee membership plus one. For example, a committee of ten will have a quorum of four members.

7. MINUTES: Minutes are recorded at each meeting and posted on the ICS and CPC website in accordance to ICS Bylaws.

8. REPORTING & ROLES:

The Chair of the ICS-UC shall prepare an annual report to the Board of Trustees that is supported by the committee members. The report outlines achieved goals as well as future objectives, strategy and budget requests.

The Chair of the ICS-UC shall be present at the Annual General Meeting.

The Chair of the ICS-UC shall submit an interim report that is supported by the committee members to the Board of Trustees' mid term meeting. The date that this report will be required will be given in advance each year.

For Terms of Office information please see the [Membership Page](#)

Urodynamics Committee Terms of Office

Member	Role	Term Start	Term End	Term Yrs	Elected	Term details	Comments
Enrico Finazzi Agrò	Chair	14-Oct-17	28-Aug-20	3	Y	3 year term will finish in 2020- can renew once	
Jian Wen	Committee Member	29-Aug-13	05-Sep-19	6	N	6 year term will finish in 2019 - CANNOT RENEW	
Alex Digesu	Committee Member	29-Aug-13	05-Sep-19	6	N	6 year term will finish in 2019 - CANNOT RENEW	
Michael Guralnick	Committee Member	23-Oct-14	28-Aug-20	6	N	6 year term will finish is 2020- CANNOT renew	
Alexandre Fornari	Committee Member	16-Sep-16	08-Sep-22	6	N	6 year term will finish 2022 - cannot renew	
Eskinder Solomon	Committee Member	16-Sep-16	08-Sep-22	6	N	6 year term will finish 2022 - cannot renew	
Luis Abranches Monteiro	Committee Member	16-Sep-16	08-Sep-22	6	N	6 year term will finish 2022 - cannot renew	
Tufan Tarcan	Committee Member	16-Sep-16	08-Sep-22	6	N	6 year term will finish 2022 - cannot renew	
Maurizio Serati	Committee Member	05-Sep-19	08-Sep-22	3	N	3 year term will finish in 2022- can renew	
Chris Harding	Committee Member	05-Sep-19	08-Sep-22	3	N	3 year term will finish in 2022- can renew	
Sherif Mourad	Ex Officio	16-Sep-16	05-Sep-19	3	N	Ex-officio	

Quorate No=4
Committee number = 8

Nominations 2019

Elect: Will need to call for Chair position

Stepping down in Gothenburg: Jian Wen, Alex Digesu

Stepping down in Las Vegas: Michael Guralnick

Starting 2019: Maurizio Serati, Chris Harding

Key	
Colour	Meaning
	Stepping down in Gothenburg
	Stepping down in Las Vegas
	Elect position- will need to re-apply
	Will need to confirm if renewing/ positions will need to be advertised after Gothenburg
	New member/position
	No action

ICS Urodynamics Committee

ICS teaching modules

The project continues with the ongoing production of new modules, some of whom published this year. The committee have produced a list of the remaining topics to be covered all the contents on the urodynamic techniques and on their indications. This should give the committee the opportunity to write some documents (basically systematic reviews) on the role of urodynamics in different indications, as already done.

The list of published topics is reported below with assigned authors (Attachment 1).

All new modules should be prepared preferably in a review adhering to PRISMA-guideline, but some topics may not fit this format. Delphi consensus process may also be used, for topics about whom the evidence is limited. The Education modules will be submitted to NU&U for peer review including a printout of the slides. The journal should create a specific section of the instruction for Authors.

A standard and specific ICS layout for slides is included in the committee's manual for the working groups. All existing modules have been transformed tot the new ICS teaching modules layout.

The process of video-recording of the modules presentations will continue with help of the ICS office staff in Bristol.

Workshop

For the second year, the Committee has organized a workshop during the ICS meeting 2019 in Gothenburg. The WS program is attached (attachment n. 2). All the committee members and some experts outside the committee will be involved.

Course accreditation

The Committee has been involved by the Education Committee in the process of recognition of educational courses on Urodynamucs. Several courses have been accredited and a new procedure to encourage the use of ICS Educational Modules and to ensure quality control in ICS recognised courses has been used.

Urodynamic Book:

The committee have started the project of a book on urodynamic techniques (provisional title "Practical Urodynamics". This project will have no costs for the ICS because it could be conducted with the collaboration of the Italian Society of Urodynamics, that have an agreement with a publisher (Springer). We plan to have the book published in 2020.

Future activities to be discussed in Gothenburg:

Urodynamic e-learning:

A project of urodynamic e-learning courses has been proposed: the realization of this project is subjected to the raising of funding from other parties, to be approved by the Board of Trustees.

Urodynamic traces quality check

The committee received a proposal by Andrew Gammie (Bristol, UK) to create a service (available on the ICS site (only for ICS members?) of quality control of the urodynamic traces. The Committee members, together with AG and probably some other experts should ensure the check of the quality of traces sent by professionals who are willing to test if their procedures for urodynamic procedures are in line with the ICS standards (Good Urodynamic Practice). This proposal will be discussed in Gothenburg. No costs should be foreseen for this activity.

Urodynamic registry

This proposal came from Kevin Rademakers (Maastricht, NL), who suggested to create a registry of the urodynamic investigations performed in centers willing to participate across Europe (World?). The idea is to review retrospectively the databases of those centers or (better) to collect prospectively the new examinations, creating a minimum common agreed dataset to have homogeneous data. The idea is to create a “big data” in urodynamics able to understand the role of these tests in different patients’ categories and possibly give insights on their following management.

Urodynamics Committee has cooperated with:

Education committee (see above)

Other committees will be involved in the production of new modules.

There are **no plans for subcommittees**. The committee steers ad hoc working groups.

There are **no requests for new members** for this year, with two new members (MS and CH) joining and two (AD and JW) leaving the committee.

Budget: (Yearly) New recordings of the modules during the annual meeting: Costs should be covered by ICS budget: ± 2-3 hours of (audio-video-ppt’s) recording.

Costs:

Studio recording of the modules in Bristol.

Website hosting of the modules cost should be covered by ICS budget

Committee meetings at-hoc outside ICS annual meeting (are and) will be arranged with no cost for ICS.

Attachment #1

The list of the 10 modules that are completed including the publication and filming:

- 1: Krhut J, Zachoval R, Smith PP, Rosier PF, Valanský L, Martan A, Zvara P. Pad weight testing in the evaluation of urinary incontinence. *Neurourol Urodyn*. 2014 Jun;33(5):507-10. doi: 10.1002/nau.22436. Epub 2013 Jun 24. Review. PubMed PMID: 23797972.
- 2: Rosier PF, Kirschner-Hermanns R, Svihra J, Homma Y, Wein AJ. ICS teaching module: Analysis of voiding, pressure flow analysis (basic module). *Neurourol Urodyn*. 2016 Jan;35(1):36-8. doi: 10.1002/nau.22660. Epub 2014 Sep 11. PubMed PMID: 25214425.
- 3: Asimakopoulos AD, De Nunzio C, Kocjancic E, Tubaro A, Rosier PF, Finazzi-Agrò E. Measurement of post-void residual urine. *Neurourol Urodyn*. 2016 Jan;35(1):55-7. doi: 10.1002/nau.22671. Epub 2014 Sep 22. PubMed PMID: 25251215.
- 4: Gammie A, D'Ancona C, Kuo HC, Rosier PF. ICS teaching module: Artefacts in urodynamic pressure traces (basic module). *Neurourol Urodyn*. 2017 Jan;36(1):35-36. doi: 10.1002/nau.22881. Epub 2015 Sep 15. Review. PubMed PMID: 26372678.
- 5: Digesu GA, Gargasole C, Hendricken C, Gore M, Kocjancic E, Khullar V, Rosier PF. ICS teaching module: Ambulatory urodynamic monitoring. *Neurourol Urodyn*. 2017 Feb;36(2):364-367. doi: 10.1002/nau.22933. Epub 2015 Nov 23. PubMed PMID: 26594872.
- 6: Tarcan T, Demirkesen O, Plata M, Castro-Diaz D: ICS Teaching Module: Detrusor leak point pressures in patients with relevant neurological abnormalities. *Neurourol Urodyn* 2017 Feb; 36(2):259-262. doi: 10.1002/nau.22947.
- 7: D'Ancona CAL, Gomes MJ, Rosier PFWM. ICS teaching module: Cystometry (basic module). *Neurourol Urodyn*. 2017 Sep;36(7):1673-1676. doi: 10.1002/nau.23181. Epub 2016 Nov 28. Review. PubMed PMID: 27891659.
- 8: Krhut J, Zachoval R, Rosier PFWM, Shelly B, Zvara P. Electromyography in the assessment and therapy of lower urinary tract dysfunction in adults. *Neurourol Urodyn*. 2018 Jan;37(1):27-32. doi: 10.1002/nau.23278. Review. PubMed PMID: 28419532.
- 9: Guralnick ML, Fritel X, Tarcan T, Espuna M, Rosier PFWM: ICS-Educational Module: Cough stress test in the evaluation of female urinary incontinence: Introducing the ICS-Uniform Cough Stress Test. *Neurourol Urodyn* 2018; 37(5):1849-1855. DOI: 10.1002/nau.23519
- 10: Schurch B, Iacovelli V, Averbek MA, Stefano C, Altaweel W, Finazzi Agrò E. Urodynamics in patients with spinal cord injury: A clinical review and best practice paper by a working group of The International Continence Society Urodynamics Committee. *Neurourol Urodyn*. 2018 Feb;37(2):581-591. doi: 10.1002/nau.23369. **(THIS ONE HAS BEEN CONVERTED TO A BEST PRACTICE CONSENSUS PAPER)**

The list of the 2 modules that are very close to completion (Currently in submission process):

1: Cystometry in children by Wen Jian Go,

2: Pressure flow in children by Wen Jian Go

The list of the modules without a manuscript or even not assigned, yet.

A) Background (Basic)

Overview of anatomy and physiology of the lower urinary tract, Peter Rosier (PR confirmed "I have some members and have started: However I halted the program for myself because of too much other priorities. I will restart soon.")

Significance of urinary symptoms, not assigned

Neurophysiology and neurogenic bladder dysfunction, Marcio Averbek (Marcio confirmed "The only teaching module I have worked in was the one entitled: "Clinical neuro-uro gynecological examination in patients with lower urinary tract dysfunction and neurologic abnormalities".)

Philosophy and aims of urodynamics, Margaret McDougald (urodynamics education module currently being prepared by working group. Was filmed in 2014 but would need re-filming. Long email from Margaret - still in progress)

Effect of pelvic floor dysfunction on the lower urinary tract, not assigned

B) Basic principles and overview of urodynamics (Basic and Advanced)

How to select patients for urodynamics: indications for various urodynamic techniques (Basic only*), Enrico Finazzi Agro

How to set up and use equipment, Peter Rosier (PR confirmed "I have some members and have started: However I halted the program for myself because of too much other priorities. I will restart soon.")

How to conduct a study, Andrew Gammie (PR confirmed "There have been plans to ask manufacturers to make a film. However before all companies were united. It should maybe planned in another manner.") AG Don't worry, this is fine. The material is ready anyway

Recognition of clinically significant events and characteristics of urodynamic studies (Basic only*), not assigned

Philosophy and aims of urodynamics, Margaret McDougald (urodynamics education module currently being prepared by working group. Was filmed in 2014 but would need re-filming. Long email from Margaret - still in progress JE chased 20/11 MM confirmed "The Philosophy and Aims of urodynamics was completed a long time ago – slide set and article and submitted to Peter Rosier and Turcan Enrico asked me to send him copy and I sorry it is still on my to do.")

Lower Urinary Tract Function and physiology (& urodynamics), Peter Rosier (urodynamics education module currently being prepared by working group. 06/11/17 peter rosier states states finished presentation which were shown and presented in 2017 Florence. Review document half way.)

Misinterpretation of urodynamic studies and artifacts, Andrew Gammie (Artifacts on urodynamic traces (advanced) AG confirmed "The second is 'in process'. The slide set will be complete by the end of the year, then we can do a video if needed")

C) Urodynamic techniques (Basic and Advanced)

Questionnaires, not assigned

Urethral pressure profilometry, Eskinder Solomon (volunteered, progress?)

New urodynamic techniques, Stefan De Watcher (no information about the progress)

Voiding diary, Margaret McDougald, (urodynamics education module currently being prepared by working group. Long email from Margaret - still being worked on. JE chased 20/11. MM responded, has some

questions on the objectives - "The document was not completed as i never received clarification as to length and objective/target audience ." JE CC'd EFA to confirm 21/11)

Flowmetry, Peter Rosier, (urodynamics education module currently being prepared by working group. 06/11/17 Peter Rosier states finished presentation which were shown and presented in 2017 Florence. Review document half way. JE chased 20/11. PR confirmed "What is written about physiology is also valid for Flowmetry. The same stage is: Clinical stress incontinence testing and good urodynamic practices (started and temporary halted)"

Videourodynamics, Carlos D'Ancona, (urodynamics education module currently being prepared by working group. Was filmed in 2013 but would need re-filming. Email from Carlos 2018 to state that has left the committee and so needs to be someone from committee. No group assigned yet - AB to email EF & TT)

(Valsalva) Leak Point Pressures ((S)UI), Measurement of Leak Point Pressure in Patients without neurological abnormalities, Christian Cobreros, (urodynamics education module currently being prepared by working group. Was filmed in 2014 but would need re-filming. Christian: Of course Prof I will try to do it as soon as possible. JE chased 22/11. CC confirmed "I have to look it up and it can be ready for 10 of December , could be ?" 21/11)

Artifacts on urodynamic traces (advanced), Andrew Gammie, (urodynamics education module currently being prepared by working group. Andrew: This is ready for final circulation I think. There was one question remaining on ureteric peristalsis and what it looks like. Would you like to see the draft, or shall I do one final check with the group?)

Zeroing, setup and corrections, Andrew Gammie, (urodynamics education module currently being prepared by working group. Andrew: I was not aware of this group! I am happy to convene and produce a document if you like. Perhaps it is related to some video training material that Peter R saw?)

Updated GUP, Peter Rosier, (urodynamics education module currently being prepared by working group. 06/11/17 Peter Rosier states finished presentation which were shown and presented in 2017 Florence. Review document half way. Peter: ASAP I will invite co-authors for 4 modules and finalize these modules. I assume that they are all presentable at the annual meeting in Philadelphia. And that they can be submitted to NU&U following on to that meeting.)

D) Urodynamic study of specific patient groups (Advanced)

Female urinary incontinence, not assigned

Female LUTS (including OAB), not assigned

Male urinary incontinence, not assigned

Male LUTS (including BPH and OAB), not assigned

Neurogenic patients (Other than SCI, MMC, Parkinson and MS that already have been addressed), Tufan Tarcan

Pediatric conditions, Neurogenic: Urodynamics in patients with neuro-spinal dysraphism, Tufan Tarcan
(The working group has been established and started to work, will be presented in Gothenburg 2019.)

Pediatric conditions, Non- Neurogenic: Giovanni Mosiello, (JE chased 22/1.1GM confirmed "I/we have started this activity . I will check with Enrico the expectations ,in order to better define the document : how to perform a correct UD evaluation in pediatrics? indications? when to perform no invasive, UD, videoUD" 03/12.)

Geriatric conditions, not assigned

Cystometry in patients with Multiple sclerosis, Enrico Finazzi Agro; Marcio Averbeck (urodynamics education module currently being prepared by working group. Enrico: in preparation. Draft already done. Probably finished by the ICS meeting in Philadelphia. Marcio: is being currently developed by myself, Brigitte Schurch, Enrico Finazzi Agro, Jalesh Panicker and Valerio Iacovelli. We are working on a Delphi consensus (last meeting 2 days before). This will be presented in

Clinical neuro-urological examination, Márcio Averbeck, (urodynamics education module currently being prepared by working group. Marcio: has been written by myself, Salma Imran Kayani, and Daniel Moser. The last version has been previously sent to Peter Rosier (and presented in the ICS Meeting in Montreal). The optimal approach for a submission has not yet been agreed.)

Practice of uroflowmetry in children, Giovanni Mosiello, (urodynamics education module currently being prepared by working group)

Cystometry in patients with Parkinsons, Enrico Finazzi Agro, (urodynamics education module currently being prepared by working group. Enrico: draft by Waled Altaweel done, but the project was stopped by Peter. At the moment this is a future project -2019?)

E) Urodynamics in practice (Basic and Advanced)

Clinical cases, not assigned

F) Translated Modules

All published modules have been translated to Turkish by the Turkish Continence Society

Analysis of voiding Pressure flow analysis (basic module) Japanese and Cystometry (basics) Japanese by Yukio Homma

Attachment #2



W21: ICS Core Curriculum (Free): How can urodynamics help me in my clinical practice?

Workshop Chair: Enrico Finazzi Agrò, Italy

04 September 2019 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:05	Introduction	Enrico Finazzi Agrò
09:05	09:15	How to evaluate a female patients with SUI before surgery in a urodynamic lab	Alex Digesu
09:15	09:25	The real value of urodynamics in female SUI	Enrico Finazzi Agrò
09:25	09:50	Discussion + clinical cases	Alex Digesu Alexandre Fornari
09:50	10:00	LUTS in males <40 years old	Eskinder Solomon
10:00	10:10	LUTS in males >40 years old	Marcus Drake
10:10	10:20	Post-prostatectomy incontinence	Michael Guralnick
10:20	10:50	Break	None
10:50	11:10	Discussion + clinical cases	Eskinder Solomon Marcus Drake Michael Guralnick
11:10	11:20	Urodynamics of Multiple Sclerosis, Parkinson, MSA	Tufan Tarcan
11:20	11:30	Urodynamics of Spinal Cord Lesions	Luis Abranches-Monteiro
11:30	12:00	Discussion + clinical cases	Tufan Tarcan Luis Abranches-Monteiro Jian Guo Wen

Aims of Workshop

This workshop, organized by the ICS Urodynamics Committee, is intended to discuss when and how to perform different urodynamic investigations in clinical practice. The workshop will provide informations about aims and methods of commonly used urodynamic tests. The workshop will discuss limits and potentials of the urodynamic investigations in different indications, providing to the audience the best available information, to understand the present role of these tests. The workshop is intended for professionals (urologists, gynecologists, rehabilitation physicians, nurses or other) who are treating functional pathologies of the lower urinary tract and want to improve their knowledge on urodynamic investigations.

Learning Objectives

Improve knowledge on indications of the urodynamic tests

Target Audience

Urology, Urogynaecology, Conservative Management

Advanced/Basic

Intermediate

Suggested Learning before Workshop Attendance

1: Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, van Kerrebroeck P, Victor A, Wein A; Standardisation Subcommittee of the International Continence Society. The standardisation of terminology of lower urinary tract function: report

from the Standardisation Sub-committee of the International Continence Society. *Neurourol Urodyn.* 2002;21(2):167-78.

PubMed PMID: 11857671.

2: Gammie A, Clarkson B, Constantinou C, Damaser M, Drinnan M, Geleijnse G, Griffiths D, Rosier P, Schäfer W, Van Mastrigt R;

International Continence Society Urodynamic Equipment Working Group. International Continence Society guidelines on

urodynamic equipment performance. *Neurourol Urodyn.* 2014 Apr;33(4):370-9. doi: 10.1002/nau.22546. Epub 2014 Jan 4.

PubMed PMID: 24390971.

3: Rosier PF, Kirschner-Hermanns R, Svihra J, Homma Y, Wein AJ. ICS teaching module: Analysis of voiding, pressure flow analysis

(basic module). *Neurourol Urodyn.* 2016 Jan;35(1):36-8. doi: 10.1002/nau.22660. Epub 2014 Sep 11. PubMed PMID: 25214425.

4: Asimakopoulos AD, De Nunzio C, Kocjancic E, Tubaro A, Rosier PF, Finazzi-Agrò E. Measurement of post-void residual urine.

Neurourol Urodyn. 2016 Jan;35(1):55-7. doi: 10.1002/nau.22671. Epub 2014 Sep 22. PubMed PMID: 25251215.

5: Gammie A, D'Ancona C, Kuo HC, Rosier PF. ICS teaching module: Artefacts in urodynamic pressure traces (basic module).

Neurourol Urodyn. 2017 Jan;36(1):35-36. doi: 10.1002/nau.22881. Epub 2015 Sep 15. Review. PubMed PMID: 26372678.

6: Tarcan T, Demirkesen O, Plata M, Castro-Diaz D. ICS teaching module: Detrusor leak point pressures in patients with relevant

neurological abnormalities. Neurourol Urodyn. 2017 Feb;36(2):259-262. doi: 10.1002/nau.22947. Epub 2015 Dec 23. Review.

PubMed PMID: 26693834.

7: D'Ancona CAL, Gomes MJ, Rosier PFWM. ICS teaching module: Cystometry (basic module). Neurourol Urodyn. 2017

Sep;36(7):1673-1676. doi: 10.1002/nau.23181. Epub 2016 Nov 28. Review. PubMed PMID: 27891659.

8: Krhut J, Zachoval R, Rosier PFWM, Shelly B, Zvara P. ICS Educational Module: Electromyography in the assessment and

therapy of lower urinary tract dysfunction in adults. Neurourol Urodyn. 2017 Apr 18. doi: 10.1002/nau.23278. [Epub ahead of

print] Review. PubMed PMID: 28419532.

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09:05 09:15 How to evaluate a female patients with SUI before surgery in a urodynamic lab Alex Digesu

A full diagnostic evaluation of urinary incontinence requires a medical history, physical examination, urinalysis, voiding diaries, assessment of quality of life, cough stress test, pad test, uroflowmetry, pelvic floor imaging and, when initial conservative treatments fail, invasive routine and ambulatory urodynamics, urethral pressure profilometry.

The cough stress test is usually performed in the standing position at a bladder volume of 300 mL or at maximum cystometric capacity if it was less than 300 mL. The results of the cough stress test

are recorded as positive if urine loss occurred with a cough or as negative if no urine loss was seen and the bladder volume was recorded. The cough stress test appears to be a reliable test. The reliability is more consistent in women with a diagnosis of urodynamic stress incontinence.

Pad testing is a non-invasive method of detecting and quantifying severity of urine leakage. The 4th International Consultation on Incontinence defined pad testing as "an optional test for evaluation of urinary incontinence." Diverse testing durations have been reported in the literature and only for the 1-hr pad test a specific test protocol has been standardized. Although it is generally believed that longer tests are more reproducible, evidence on the accuracy of different methods of pad testing is inconsistent. A 24-hr test is more reproducible than a 1-hr test, but longer testing requires more preparation and a greater commitment on the part of the patient. A 24-hr testing is reported to be adequate in routine clinical settings while 48- to 72-hr testing is deemed necessary for clinical research. Performing this test in conjunction with a voiding diary, or simply recording fluid intake and frequency of incontinence episodes, will significantly increase its utility. A standard protocol for 24- to 72-hr pad testing does not exist at the present time. Despite the above limitations, the pad test provides objective assessment of involuntary urine loss.

Cystometry is the method by which the storage function of the lower urinary tract (LUT) is measured during the filling of the bladder. The aim of urodynamics is to find an objective, pathophysiological, explanation for the patient's LUT symptoms. Urodynamics is a replication of the LUT physiology in a laboratory situation and it is still considered the golden standard for LUT storage function assessment.

An analysis of and information on procedures available for the ambulatory setup in women with stress urinary incontinence will be presented.

09:15 09:25 The real value of urodynamics in female SUI Enrico Finazzi Agrò

The role of urodynamic investigation (UDI) before surgery for stress urinary incontinence (SUI) in female patients has been widely discussed in the last years. Although UDI used to be considered mandatory before surgery in all female patients affected by SUI according to several guidelines or recommendations, there was a lack of clear demonstrations on its role in improving clinical outcomes and clinical decision making.

Two systematic reviews on this subject have been published. In the first one, Clement et al. concluded that while urodynamics may change clinical decision-making, there is "some high quality evidence that this did not result in lower urinary incontinence rates after treatment". In the second one, Rachaneni et al. stated that UDI do not improve outcomes "in women undergoing primary surgery for SUI or stress-predominant MUI without voiding difficulties". These two systematic reviews included few papers and most of the patients analyzed came from the ValUE study.

This sort of conclusions should be properly analyzed focusing on the type of stress incontinence (uncomplicated and complicated). Agur et al. retrospectively analyzed 6276 women with UI, from an electronic database at a tertiary referral center; only 324 (5.2%) women had pure SUI. This was largely confirmed by an Italian multicenter database that showed that only 36% of more 2053 patients could have been diagnosed as having an "uncomplicated" SUI and 64% were "complicated", according to ValUE trial criteria. Furthermore, preoperative UDI led to the diagnosis

of different type of urinary incontinence in 74.6% of complicated vs 40% of uncomplicated SUI cases ($P = 0.0001$). Moreover, a voiding dysfunction on UDI was observed in 13.4% of the uncomplicated cases and in 22.5% of the complicated cases ($P = 0.0001$).

These considerations lead one to think about two main points. On one hand, the so-called “uncomplicated” SUI patients are a minority. On the other hand, in the majority of “complicated” patients, the urodynamic observation varies from the pre-urodynamic diagnosis much more frequently than in the “uncomplicated” patients. Thus, in “complicated” patients, the role of urodynamic seems not to be challenged yet and UDI seems to be highly suggested.

Furthermore, for uncomplicated patients we can say that UDI might not change the outcome but there are other parameters we need to evaluate such as an overlapping voiding dysfunction or an underlying detrusor overactivity. A tailored treatment is an essential target to obtain. UDI may prevent surgical intervention in women without SUI or with prevalent detrusor overactivity incontinence. An accurate assessment of the risks and benefits of surgery is fundamental to facilitate a correct preoperative counseling directed towards appropriate patient expectations, as well as guide the proactive management of postoperative symptoms. In particular, the presence of a pre-existing voiding dysfunction could affect the outcomes.

In conclusion, in the majority of patients (the “complicated” ones) the role of UDI has not been fully evaluated. Maybe UDI itself can expand our knowledge in those conditions where pathology is variable, uncertain and multifactorial and where the “evidence-based” methods are difficult to satisfy.

09:50 10:00 LUTS in males <40 years old Eskinder Solomon

Although “young” men with lower urinary tract symptoms (LUTS) are not uncommon, they are often misdiagnosed as having chronic prostatitis or psychogenic voiding dysfunction due to negative physical or laboratory investigation findings. These men are typically empirically treated with antibiotics, antimuscarinic, β_3 -AR agonist and/or α -blockers with unpredictable response rates.

Unlike in older men, LUTS in “young” men have a variety of underlying causes. These include bladder neck dyssynergia, dysfunctional voiding (non-relaxing external sphincter/idiopathic DSD), late-presentation posterior urethral valves, early-onset benign prostatic hyperplasia and urethral strictures. Detrusor overactivity and underactivity may also result secondary to chronic bladder outlet obstruction (BOO) or idiopathically.

In this section of the workshop, we will discuss how to evaluate potential BOO using video urodynamics with examples of characteristic presentations of various aetiologies. The pressure/flow study and the potential applicability of BOO nomogram in young men will also be addressed.

Young men are often bashful and anxious during urodynamic investigations limiting the validity and information that can be acquired during the test. Practical tips on how to obtain a representative study, including when to consider ambulatory urodynamics as well as how to make the UDS study as tolerable as possible will also be addressed.

10:00 10:10 LUTS in males >40 years old Marcus Drake

Past the age of 40, there is an increased prevalence of benign prostate enlargement and detrusor underactivity (DUA). Consequently, the emergence of slow stream can reflect two potential contributory factors. Medical history can indicate likely factors for DUA, such as chronic diabetes mellitus. However, the main way to decide the exact mechanism of slow stream in an individual patient is to measure bladder pressure when passing urine, i.e. a pressure flow study. A high pressure with slow flow is diagnostic of bladder outlet obstruction (BOO), and is quantified by assessing the BOO Index (BOOI). This is calculated very simply by looking at the detrusor pressure at the time of maximum flow rate ($P_{detQmax}$) and the maximum flow rate (Q_{max}), being careful to exclude any artefacts which might mislead the numbers being used. The equation giving BOOI is $P_{detQmax} - 2Q_{max}$, and if this gives a number above 40 then the BOOI indicates obstruction is present. In general it is assumed that the prostate is responsible, particularly if the rectal examination finds enlargement. For the BCI, the same parameters are used, but in this case the equation is $P_{detQmax} + 5Q_{max}$. A value above 100 indicates normal contractility. If a man has $BOOI > 40$ and $BCI > 100$, then he has an excellent chance of improved urinary stream by doing an operation to reduce the blockage. In order to be confident about the conclusions of the urodynamic pressure flow study, it is essential to optimise the conditions of testing. The man must not be over-hydrated, they must be dealt with considerately so they are fairly relaxed, catheterisation should be gentle, and filling should not be too fast. If detrusor overactivity is seen during filling, it should be allowed to settle, and perhaps even stabilised by laying the patient flat, before the pressure flow study is started. Quality checks are essential, since the pressure-measuring catheter might become unreliable during the study; this means that cough subtraction checks should be done during filling, and also before and after voiding.

10:10 10:20 Post-prostatectomy incontinence Michael Guralnick

Urinary incontinence may occur to some degree after prostate surgery (benign and malignant): in approximately 70% of men after radical prostatectomy (RP) for prostate cancer (with 1-5% of men seeking surgery for this) and 2% of men after surgery for benign prostatic hyperplasia (BPH). The most common cause is urethral sphincter deficiency due to damage/trauma/scarring of the urinary sphincter mechanism resulting in stress urinary incontinence (SUI). However, a bladder dysfunction (eg. detrusor overactivity, low bladder compliance, detrusor weakness/underactivity) may also be present in 50-70% of these men and, in a minority of post RP patients (<10%) a bladder dysfunction is the sole cause for the incontinence. The evaluation of the patient with post-prostatectomy incontinence is performed to identify the type(s) of incontinence present as well as any other lower urinary tract symptoms/pathology. A history and physical exam are essential in this regard, as is urine testing to rule out infection and hematuria. Voiding diaries and

pad testing provide a quantitative assessment of the patient's urinary habits and help assess the magnitude of the incontinence. Endoscopy may be performed to rule out urethral and intravesical pathology (stricture, tumor). Formal urodynamic testing (UDS) to assess the functioning of the lower urinary tract (bladder, sphincter) may be of value in helping to identify the type(s) of incontinence (when the diagnosis uncertain based on the history and physical exam) and associated lower urinary tract pathology. The filling phase of UDS (cystometrogram, CMG) provides information on bladder capacity and compliance/storage pressures, the presence of detrusor overactivity and the presence of stress urinary incontinence (via stress testing/leak point pressure testing) while the voiding phase (pressure-flow study, PFS) assesses for the presence of bladder outlet obstruction and provides information on detrusor contractility (i.e. presence/absence of detrusor weakness/underactivity) and bladder emptying. While not essential in the initial conservative management of the patient with post-prostatectomy incontinence, UDS identification of the specific type(s) of incontinence and associated bladder dysfunction may be helpful to guide patients to appropriate surgical therapies for the incontinence. Furthermore, the UDS identification of serious bladder dysfunction (e.g. very low bladder compliance), may warrant more aggressive management of that dysfunction prior to surgical treatment of the more common sphincter deficiency; at a minimum, it may prompt closer monitoring of the issue over time. While the UDS techniques in the post-prostatectomy patient are essentially the same as for any UDS, some modifications may be required in order to optimize the chances of identifying the various dysfunctions of concern.

11:10 11:20 Urodynamics of Multiple Sclerosis, Parkinson, MSA Tufan Tarcan

Multiple sclerosis (MS), Parkinson's disease (PD), Dementia, and Multiple System Atrophy (MSA) have been classified in the last ICI as acquired, progressive conditions of brain and brainstem leading to neurogenic lower urinary tract dysfunction (N-LUTD). MS and MSA are conditions that can arise in more than one region of the CNS. Urodynamic studies are considered gold standard evaluation methods for N-LUTD. However, there is no single algorithm that works best for all patients with N-LUTD, even in the same subgroup, since the underlying neurogenic deficit may be quite heterogeneous in terms of severity, natural progress, clinical symptoms and signs and consequently, of the risk for upper urinary tract deterioration. Unfortunately, most of the evidence on LUTD comes from studies in patients with SCI and myelodysplasia.

MS is an immune-mediated neuroinflammatory and neurodegenerative disease of the central nervous system with a heterogeneous clinical presentation and course and is the leading non-traumatic neurological cause of disability in young and middle-aged people. The prevalence of LUTD in patients with MS is about 50–90%. Furthermore, the incidence of LUTD was reported to be related to the disability status of patients; if a patient has walking difficulty, the possibility of that patient having LUTD is nearly 100%. There is much debate regarding the use of invasive urodynamics in the initial evaluation of LUTD in patients with MS. According to some authors, the initial treatment of patients with MS-related LUTD appears to be possible by a reasonable non-invasive evaluation and invasive urodynamic tests should be spared for cases of initial conservative treatment failure and/or UUT deterioration. This suggestion may be true in a very selected group of patients, but cannot be generalized to the whole MS population. The most

common urodynamic abnormality in MS is detrusor overactivity (DO) which is commonly complicated by striated sphincter dyssynergia.

PD is a neurodegenerative disorder of unknown etiology that affects the dopaminergic neurons of the substantia nigra. The differential diagnosis should include MSA, progressive supranuclear palsy, cortical-basal ganglionic degeneration, vascular parkinsonism, and Lewy body dementia. LUTD occurs in 35% to 70% of patients with PD where the most common urodynamic finding is DO. The smooth sphincter is always synergic. True detrusor sphincter dyssynergia (DSD) does not occur, however, sporadic involuntary activity in the striated sphincter during involuntary bladder contractions or

a delay in striated sphincter relaxation (bradykinesia) at the onset of voluntary micturition can be urodynamically misinterpreted as DSD. Detrusor areflexia is a rare finding in PD.

It is important to remember that many cases of "PD" in the older literature may essentially have been MSA, and citations

regarding urodynamic findings may therefore not be correct. MSA is a progressive neurodegenerative disease of unknown etiology. DO is the most frequent finding. Decreased compliance may accompany. As the disease progresses, difficulty in initiating and maintaining voiding may occur. In MSA, video-urodynamic studies may reveal an open bladder neck, associated with findings of striated sphincter denervation on motor unit electromyography leading to sphincteric urinary incontinence.

11:20 11:30 Urodynamics of Spinal Cord Lesions

Luis Abranches-Monteiro

Spinal cord lesions present an array of different urodynamic patterns depending mostly on the degree and the level of the lesion.

The aim of urinary rehabilitation of these patients involves a thorough knowledge and assessment of the neural urinary control.

Dysfunction range from urinary incontinence and infection to voiding obstruction. The first are responsible for an impact on quality of life while the second, even silent can lead to upper tract deterioration.

Bladder sensations, volumes and bladder wall behavior are the most important features to appraise the storage phase, while pressure flow curves describe the voiding phase.

The urodynamic evaluation of these patients involves three important exams:

Filling and voiding cystometries,

Perineal or sphincter EMG

Video urodynamics

These urodynamic examinations test different features of the neurogenic uropathy and are to be chosen by the clinician upon the anatomy of the lesions.

Different dysfunctions are to be expected in different groups of patients. Classically are divided in:

Sacral lesions

High Supra-sacral lesions

Low supra sacral lesions

2nd neuron lesions

The resulting dysfunctions can affect bladder sensation, and bladder volume, both measured in a filling cystometry.

Bladder compliance and, bladder contractions and its magnitude are the goal of manometric cystometry. These are the result of complete or partial loss of brain control.

In supra-sacral lesions, the sacral reflexes of bladder are accompanied by a loss of sphincter synergy with detrusor leading to even higher pressures of bladder lumen and risk of upper tract dilation. This dyssynergia may affect the distal sphincter or the proximal or bladder neck, depending on the affection of sympathetic pathways to the bladder.

External or distal dyssynergia is characterized by an evidence of obstruction during detrusor contraction and a raise in perineal EMG activity. Proximal dyssynergias need imaging methods synchronous to pressure measurements as in video-urodynamics. Adding imaging, vesico-urethral reflux can be seen and at which pressure occurs.

Filling cystometry may also detect the bladder pressure at the beginning of leakage. This leakage or incontinence pressure (detrusor leak point pressure) is known to be important determining the prognosis of upper tract deterioration.

Wrap-up:

Use of simple urodynamics (filling and voiding cystometry) to evaluate:

Bladder sensation

Bladder compliance

Bladder volume

Detrusor filling behaviour

Leak point pressure

Detrusor emptying power

Outlet obstruction

And video-urodynamics

To set pressure of VU reflux

To identify level of dyssinergia