

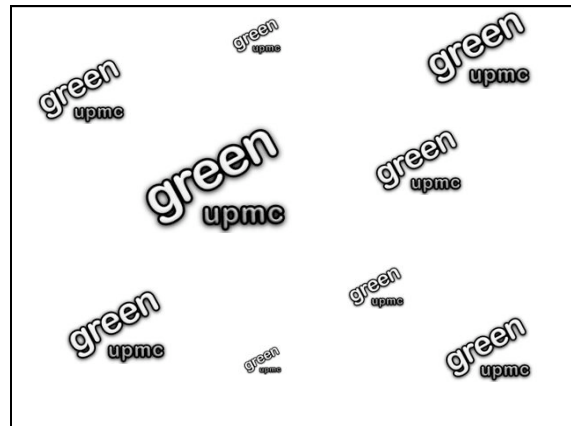
**Explorations Urodynamiques. Analyse et traitement du signal.
Interprétations des données**

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– A clear indication for and appropriate selection of relevant test measurements and procedures

– Precise measurement with data quality control and complete documentation

– Accurate analysis and critical reporting of results

The aim of clinical urodynamics is to reproduce symptoms whilst making precise measurements in order to identify the underlying causes for the symptoms, and to quantify the related pathophysiological processes. By doing so, it should be possible to establish objectively the presence of a dysfunction and understand its clinical implications. Thus, we may either confirm a diagnosis or give a new, specifically urodynamic, diagnosis. The quantitative measurement may be supplemented by imaging (videourodynamics).

Urodynamic measurements cannot yet be completely automated, except for the most simple urodynamic procedure, uroflowmetry. This is not an inherent problem of the measurement itself, but is due to the current limitations of urodynamic equipment and the lack of a consensus on the precise method of measurement, signal processing, quantification, documentation, and interpretation. With the publication of this ICS Standardisation document on good urodynamic practice, it

tract (LUT) function by the measurement of physiological parameters. The first step is to formulate a question or questions from a careful examination, and standard urological patient's recordings of micturitions and frequency volume chart, and repeated free determination of post-void residual volume.

Urodynamic techniques were performed according to the 'Standardization Committee Practice' recommended by the International Continence Society.

This report is from the Standardization Committee.

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et d'expliquer de la manière la plus précise les symptômes qui se manifestent. L'observation et l'enregistrement de la quantité urinaire par exemple, l'observation d'une fuite lors d'un effort de toux. Un signe a une traduction physiologique objective alors que le symptôme est une description purement subjective. Les informations obtenues de l'étude du calendrier mictionnel, des tests d'immersion ou des questionnaires validés (symptômes ou qualité de vie) sont également une manière de vérifier et quantifier des symptômes décrits par le patient.

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Figure 1. Typical system for measuring physiological parameters.

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*See note on Society on p. 69.

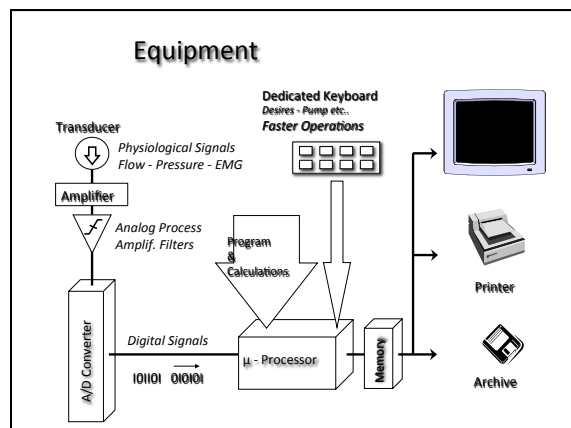
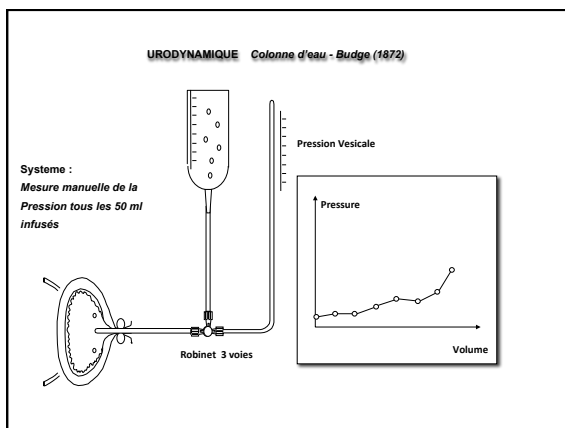
A electrical quantity with a single value at each point along the length of the urethra.

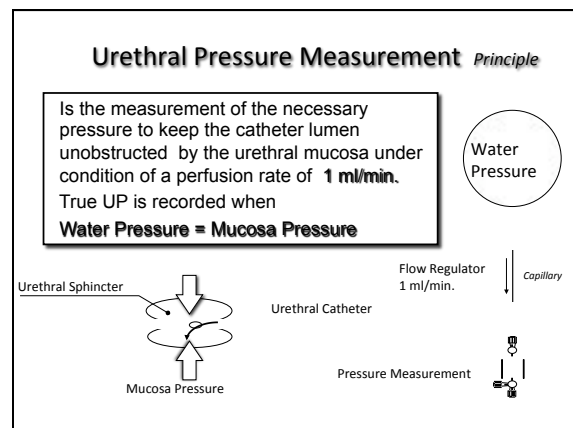
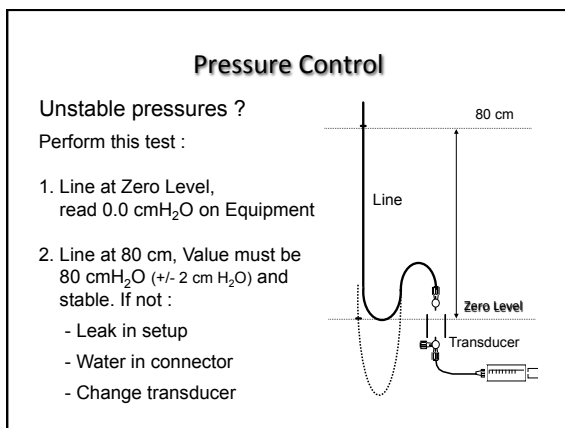
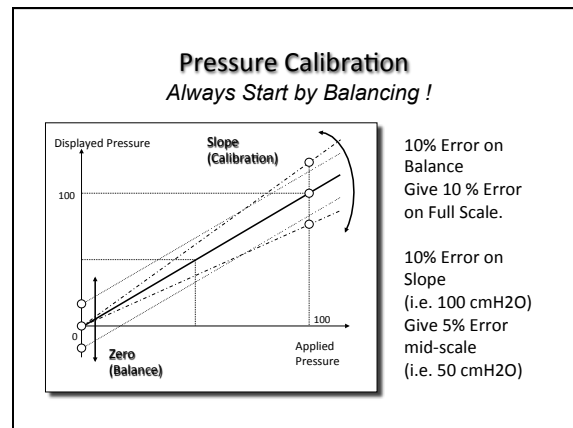
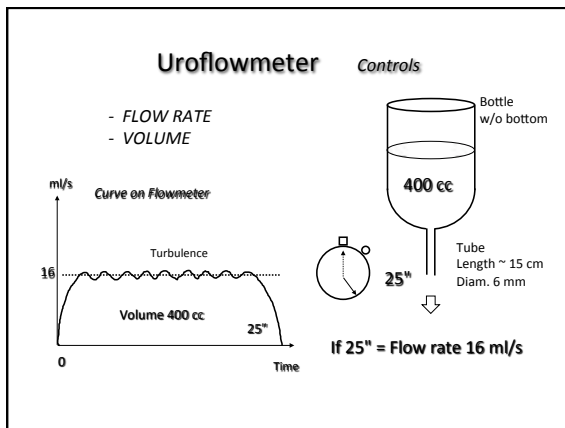
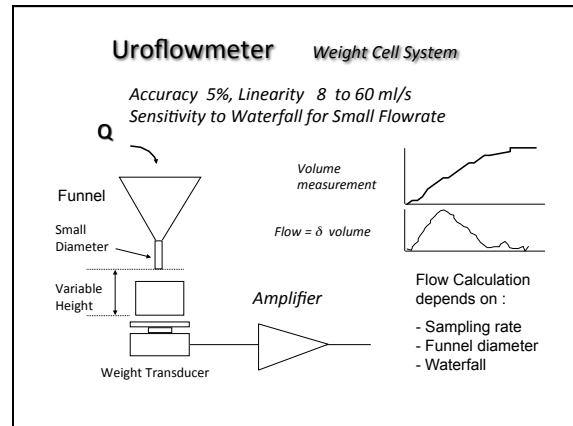
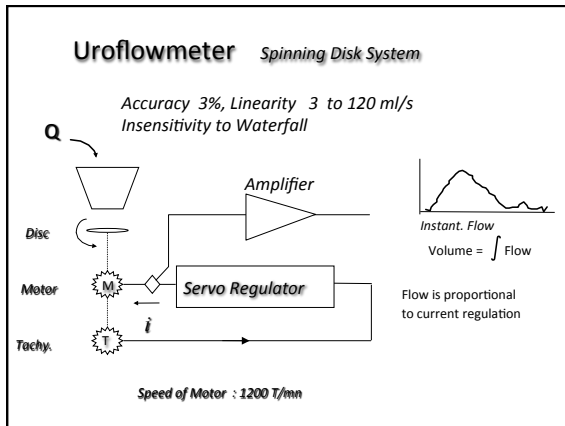
The concept of urethral pressure is only useful if the urethra collapses easily at attainable pressures to zero cross-sectional area, as is normally the case. The use of a catheter introduces a non-zero cross-sectional area (given by the probe) and changes the natural shape of the lumen. The effect on the measured urethral pressure is small for highly distensible (collapsible) tubes (Gottlieb, 1985).

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U.P.M. 5 Methods of Perfusion

Water Pressure = At least 3 times Maximum Urethral Pressure

- Gravity
UP_{max} depends on h
- Pres. Cuff
*Max. Pressure 400 cmH₂O
Monitoring of Pressure*
- Water Pump
*Damping Tube
Change Montage for Test*
- Syringe Driver
Small Volume
- Arndorfer Pump
Big - Expensive

Transducer Perfusion

Cuff or Surgi-Press

Urethra-Cysto + EMG + UPP

Using Perfusion Set 2 or 3, One setup all at Once for all tests !!

Urethro-Cysto + EMG + UPP

Using Surgi-Press Infuser, Better Quality and More Autonomy you get !

Infusion Rate Versus Equipment / Catheters

Even if Water Pump is correctly calibrated, Infusion Rate depends on:

- Length/diameter of the line
- Diameter/length of catheter

For Your Guide Lines, Infusion rate max. ml/mn :

	Pump* (set at 100ml/mn)	Cuff (400cmH ₂ O)	Gravity (150cmH ₂ O)
1 lumen cath. 5F	70	60	15
1 lumen cath. 8F	90	200	20
1 lumen cath. 10F	100	300	45
2 lumen cath. 8F	65	50	15
3 lumen cath. 10F	70	70	15

* Infusion rate limited to specifications of the pump.

Micro-Tip Transducer Calibration

- Place MTT in calibration chamber
- Tap in position 1, fill chamber with water w/o air bubble
- Close Infusion Lumen (if any)
- Tap in position 2, fill line - then Tap in position 3
- Check NO LEAK in montage
- Line at "Zero Level" - perform Balance (zero)
- Line at "50 cm" - perform Calibration (read 50 cmH₂O)
- Repeat procedure

EMG Amplifiers Environment

Environmental Interference penetrates Patient
Patient Must Be Grounded

Balanced Inputs
50/60 Hz counterbalanced
 $V^+ + V^- = 0$

EMG : 1 μ V to 1 mV

High Input Impedance >1500 MOhms and Rejection >100 dB

Environmental Artifacts

In EMG Patient is Antenna
Artifacts are transferred

Grounding in Uro-Neuro Tests

To Reduce Stimulation Artifact - Place Ground between Recording and Stimulating Electrodes

EMG (no stimulation)

BCR (ground on leg)

MNC (on Patient's leg and Doctor's arm)

SNC (ground between S & R)

Les techniques d'explorations urodynamiques

Techniques Urodynamiques (Methodes)

Débitmétrie
Disque rotatif, capteur de poids

Remplissage vessie
poids Gravitée intégré, Eau Pompe, CO₂ Pompe, capteur pression

Pression
Capteurs externes, Micro capteur elec., With or w/o Lumen, 5 cm Spacing, Single or Dual

Disponible : Tip, Dome, Transducer

Les conditions d'enregistrement

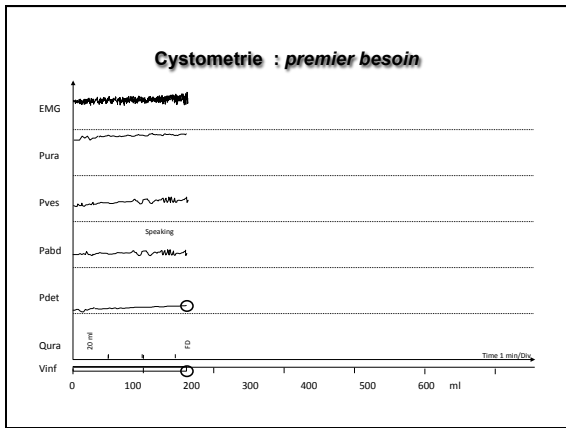
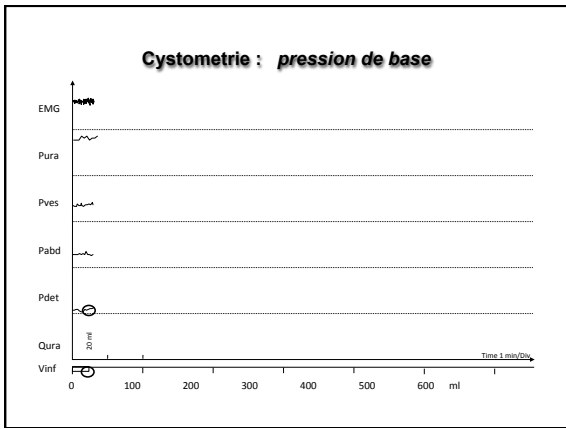
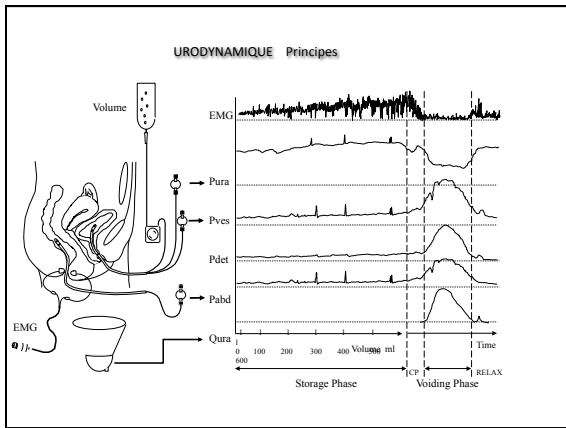
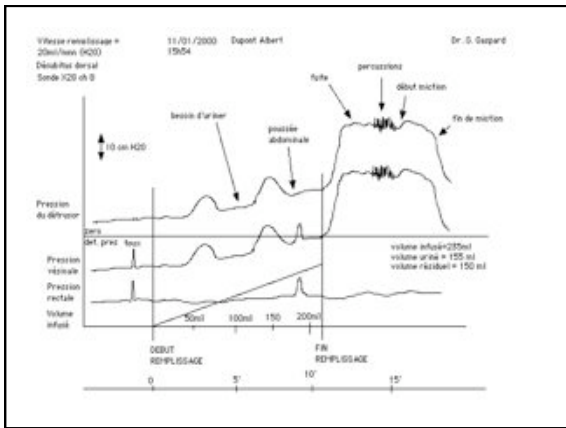
CYSTOMETRIE

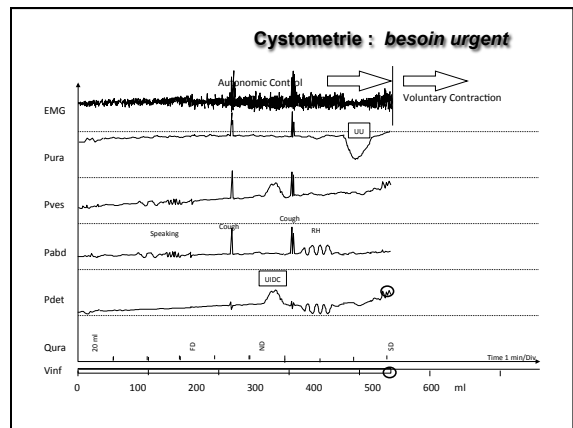
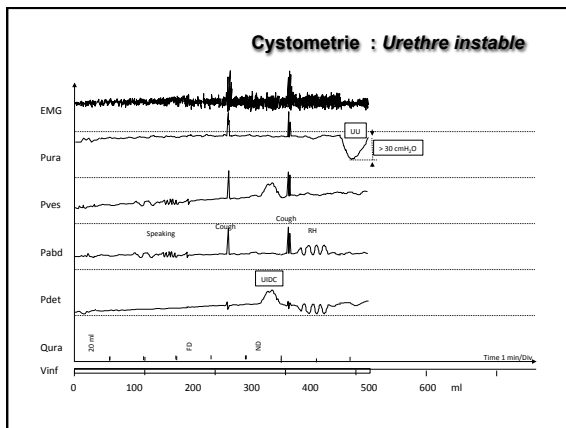
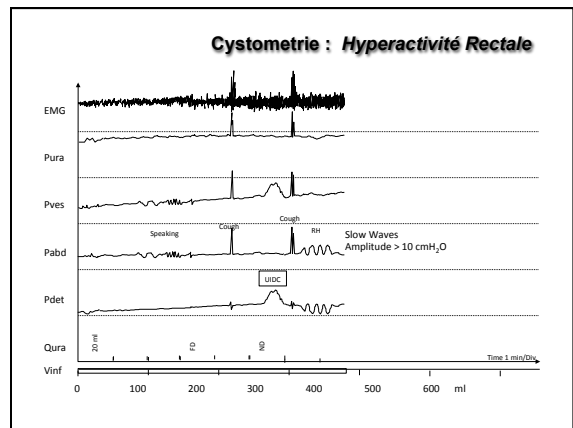
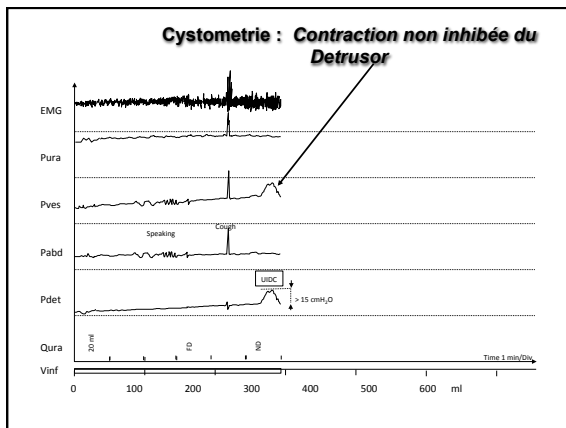
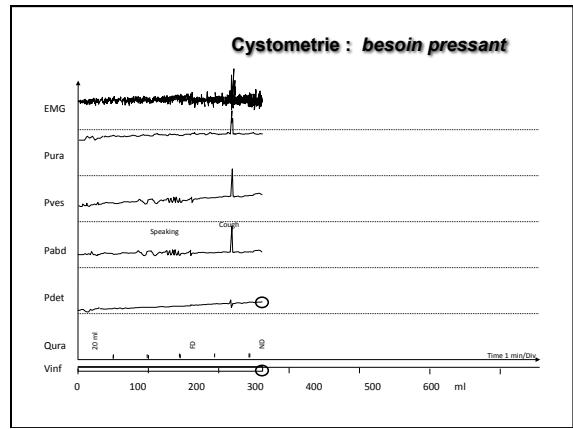
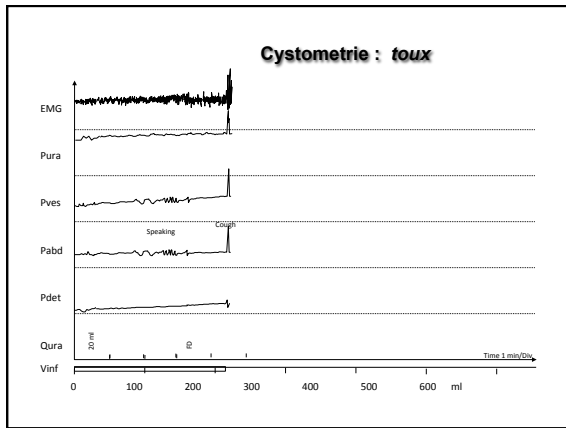
Patient

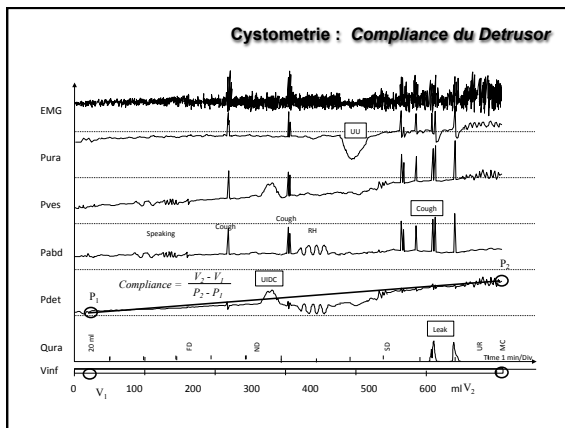
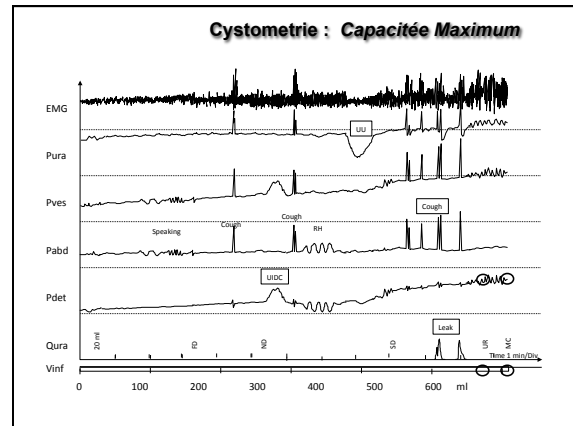
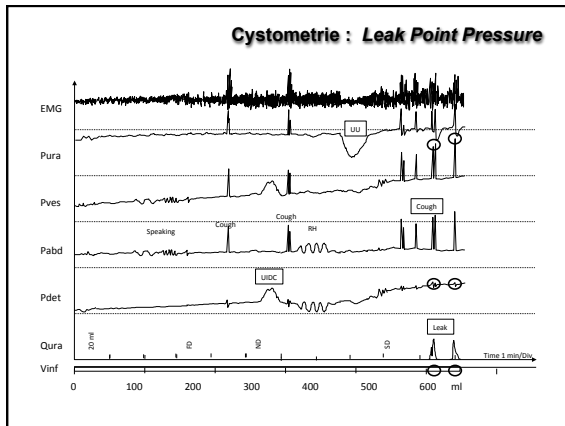
- vessie vide
- Catheters en place et purgés
- réponses OK en pression (élévation à la toux)
- EMG réponse OK
- Information du patient sur le « besoin d'uriner »
- Patient relaxé

Equipement

- Vitesse remplissage 50 ml/min.
- fenêtre analyse 1 min./Div.
- Amplitude pression 20 cmH₂O/Div.



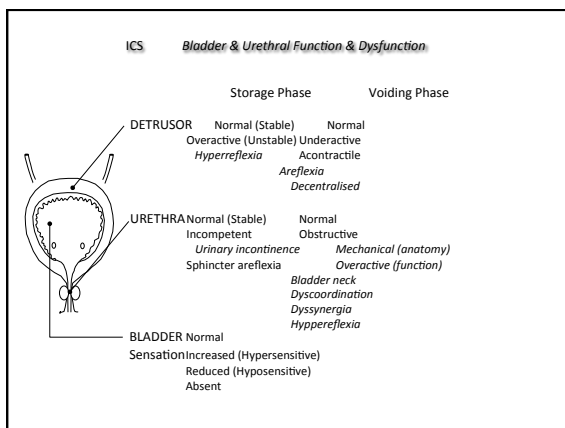




Resultats Cystométrie

Storage phase

Evenements	Pdet cmH ₂ O	Volume ml	Compliance ml/cmH ₂ O
Pression base	BP 3	20	
1er besoin	FD 7	160	35
B. Pressant	ND 12	270	22
B. impérieux	SD 21	440	19
Urgency	UR 30	575	15
Capacité Max Cysto.	CC 32	610	20 18



Les courbes

