Workshop, SBoD Work Group
ITHACA, eUROGEN, ERKnet - 14-15 November 2024 – Paris

Workshop Summary

The Spina Bifida and Other dysraphisms (SBoD) Workgroup has launched with eUROGEN and ERKnet a new workshop on SBoD and fetal surgery.

The event was held in Paris at the Hôpital Rothschild, on November 14-15, 2024. This two-day workshop offers an in-depth exploration of current research and advances in genetic and perinatal aspects of neural tube defects (NTDs) and related conditions. This event brought together 40 Participants

We had the privilege of hosting exceptional presentations from leading experts, fostering valuable discussions, enhanced networking opportunities, and forward-thinking strategies in the field of spina bifida and other spinal dysraphisms.

- Day 1 covers the latest insights into the genetics of NTDs, whole genome analysis, and perinatal bladder function evaluation, including post-surgical outcomes and collaborative discussions.
- Day 2 focuses on updates to the ORPHANET classification for dysraphisms and innovative management strategies for neurogenic bladder in spina bifida patients.

D1 – 14 November

Session 1 – Genetics

Current knowledge on the genetics of NTDs, M Faoucher, S Odent, Rennes

NTDs are multifactorial malformations where oligogenic combinations can be highlighted in families and isolated cases thought high-thoughput sequencing. Patients have more oligogenic combination with rare and deleterious varaints in candidate gene than control. Half of the genes implicated in oligogenic combination are implicated in Sonic HedgeHog pathway, ciliogenesis and Planar Cell Polarity pathway

Whole genome analysis for dummies M Faoucher, S Odent, Rennes

High-throughput sequencing has revolutionized the field of medical genetics over the past 10 years and lead to the discovery of hundreds of gene implicated in human diseases.
Whole genome sequencing allows for the detection of all genetic anomalies commonly involved in diseases such as Single Nucleotide Variant, Copy Number Variation and Structural Variant.
Bioinformatics pipelines, effective variant filtering strategies and genetic expertise are essential for providing results that improve patient care.

Digenic inheritance of PAX3 and SFRP5 underlies syndromic myelomeningocele, C Mirdass, M Faoucher, Rennes, Paris

Genetic analyses carried out at the University Hospital of Rennes have shown an accumulation of two variants in the PAX3 and SFRP5 genes in members of a family suffering from myelomeningocele. In order to characterize the pathogenicity of these variants and their possible interaction, we are using human stem cell-derived spinal cord organoid models and studying the effect of these variants on epithelial structure in our organoids.

Session 2 - Perinatal evaluation of the bladder function

Could we evaluate the bladder function in utero?, J Deprest, Leuven 12.30-13-00
animal experimental evidence of impact of spina bifida aperta on pelvic floor function and its potential reversal by prenatal surgery
the clinical data available on pelvic floor function in fetuses managed expectantly or operated prior to birth
clinical observational data on the measurement of bladder function and its correlation with outcom

Postnatal evaluation of the function bladder following in utero repair of MMC, G Royo, Barcelona
The motor and neurological benefits for patients with prenatal closure have been demonstrated. However, there is no scientific evidence supporting the urological benefits. It is necessary to develop standardized diagnostic and therapeutic guidelines for patients with prenatal closure of the myelomeningocele defect. In our center, as in other series, we have observed an increase in cases of difficult-to-control bladders with high-risk urodynamic pattern and incontinence despite having bladders at low pressures or stable bladders, which makes proactive management in early ages essential to attempt to prevent renal failure, incontinence, and subsequent surgeries.

Does fetal surgery for MMC improve the urological outcome, G Mosiello, Rome
A specific session has been dedicated to the evaluation of the fetal bladder function with presentations on how to evaluate the bladder function in utero (Deprest) , differences in bladder function in MMC operated before or after the birth (Royo) and comparing different experience worldwide (Europe, USA, Brazil, etc) in order to define the real impact of fetal surgery on urological outcome. Evaluating the data reported on literature it seems data one concern is the different management between centers (Mosiello), for this reason all the panelists (Capone, Nijman and Peyrronet) and partecipants, agrred to prepare a common document involving fetal surgeon, gynecologist, pediatric urologist , pediatric nephrologist for a common uro-nephrological approach. This document will be produced by ITHACA, EUROGEN ERKNET and EAU .

REDCap-based database of the prenatally repaired spina bifida cases from Vall d'Hebron University Hospital, N Maiz

1. Patient inclusion: Expanding the database to include cases repaired postnatally and even those resulting in termination of pregnancy.
2. Data collection: Emphasizing the need for the database to be streamlined and collect only the essential data necessary to achieve its purpose.
3. Objective of the database.
4. Informed consent: Including a clause in the informed consent form requesting the patient's permission to share the data internationally.

D2 – 15 November

Session 3 - ORPHANET classification up date: the next steps

The 2024 ORPHANET classification for Dysraphisms, M Fructuoso, Paris 9.00-10.00
Part I: The Orphanet Nomenclature & Classification of Rare Diseases

- Introduction and principles
- How it is organised
- Orpha.net database and other tools

Part II: The maintenance of the classification and the ORPHAcodes

- How is the Orphanet database updated?
- How to propose an action

Part III: Workflow process for Orphanet & ERN collaboration

- Collaboration methodology: some examples of recent collaborations with ERNs

Focus on the SBoD revision project

Feedback from care givers 10.00-11.00, F Dhombres, Paris.

Classifying the spinal dysraphisms – is there a need to change? Dominic Thompson

During the last 2 decades new entities have been described under the umbrella term of spinal dysraphism. This has resulted in a profusion of terms and synonyms leading to confusion, risk of misdiagnosis and difficulties in studying natural history or the results of treatment.

Existing classifications of spinal dysraphism are too crude to encompass the nuances of these new variants. These classifications are largely based on presumed embryopathogenesis rather than animal or experimental evidence and describe the spinal cord changes in isolation, ignoring associated bone changes and skin stigmata.

These observations constitute an imperative to adopt a new approach, an approach that is descriptive, reproducible and easy to apply. Such has been the challenge of the new SBoD classification.

Session 4 - Innovative management of neurologic bladder

Survey feed back

28 answers / 40 participants

Country participation

1. France
2. Germany
3. Ireland
4. Italy
5. Norway
6. Poland
7. Spain
8. United Kingdom

SPINA BIFIDA AND OTHER DYSRAPHISMS

European Reference Network for rare or low prevalence complex diseases

Network Intellectual Disability and Congenital Malformations (ERN ITHACA)

Vue d'ensemble des réponses

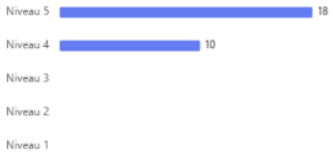
Actif

Réponses	Résultat moyen	Durée moyenne
28	0	03:56

1. Overall, how satisfied were you with this Training Workshop (0 point)

En savoir plus

4.64
Évaluation moyenne



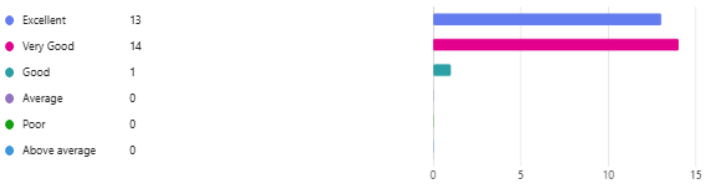
2. Usefulness of the information presented (0 point)

En savoir plus

4.57
Évaluation moyenne

3. How would you rate this workshop, based on the following criteria? (0 point)

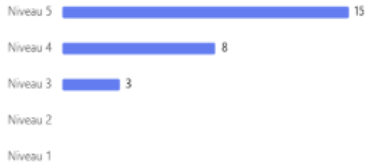
En savoir plus



4. Day 1, Session 1 - Genetics (0 point)

En savoir plus

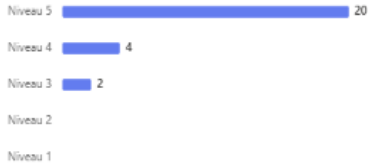
4.46
Évaluation moyenne



5. Day 1, Session 2 - Perinatal evaluation of the bladder function (0 point)

En savoir plus

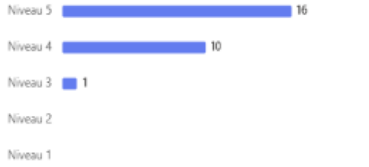
4.69
Évaluation moyenne



6. Day 2, Session 3 - ORPHANET classification up date: the next steps (0 point)

En savoir plus

4.56
Évaluation moyenne



7. Day 2, Session 4 - Innovative management of neurologic bladder (0 point)

En savoir plus

4.64
Évaluation moyenne

Key Point : the most important message to keep

- strong trans ERN Collaboration
- Importance of proper description of findings
- New classification ; guidelines eau
- Proactive management
- New ideas and future projects
- It is good to learn from super experts
- importance of contemporary multidisciplinary approach
- More round table discussion
- Do not change anything
- The important of classification of SBoD
- Perfect comminication between patients, coordinators and specialist
- Huge collaborative work
- Thank you very much! It was my pleasure to participate: