

# 16<sup>ème</sup> Journée et Prix de la Recherche Clinique

Vendredi 12 mai 2023  
13h30 – 18h00

Centre de l'innovation - HUG  
Bât. Julliard



## Programme & Recueil des résumés

## BIENVENUE

Cher(e) Collègue,

Nous sommes heureux de vous retrouver pour cette 16<sup>ème</sup> Journée de la recherche clinique.

Notre Journée fait partie du programme des manifestations annuelles de nos institutions : c'est le rendez-vous du mois de mai qui met en valeur l'activité de recherche des HUG et de la Faculté de médecine de l'Université de Genève par l'intermédiaire des publications soumises.

Parmi les résumés que vous avez soumis, un jury, présidé par le Pr P. Lalive d'Épinay, a choisi les projets qui seront présentés oralement dont celui qui recevra le Prix de la recherche clinique 2023.

Le Prix médecine et genre et le Prix soignant.e seront également remis par leur jury respectif.

Quant aux posters, ils seront soumis à l'évaluation du public pendant la pause-café : c'est vous qui choisirez le meilleur poster et l'équipe lauréate de ce prix !

La première session de présentations sera suivie par la Conférence de la **Pre Olivia Keiser**, Associate Professor of Epidemiology at the Institute of Global Health, University of Geneva and the Director of the GRAPH Network:

### **“Infectious disease epidemiology: from HIV and Covid 19 to a more integrated approach »**

Comme chaque année, la distribution des prix et l'annonce des lauréats clôturera cette magnifique journée.

Nous nous réjouissons de vous voir nombreux le 12 mai 2023!

Professeur Jérôme Pugin

Docteure Isabelle Semac

Pour toute information sur la Journée de la recherche clinique:

<http://crc.hug-ge.ch/>

corinne.chaudet@hcuge.ch, tél. 022 372 91 34

## INFORMATION GENERALE

### Qui participe?

Tous les chercheurs des HUG et de la Faculté de médecine ayant terminé récemment un projet de recherche clinique dont les résultats sont directement applicables aux soins ou aux patients.

50 projets de recherche provenant de services très variés, incluant les 15 travaux des meilleurs mémoires de Master de médecine 2022, ont été soumis pour cette seizième édition.

### Le jury du Prix de la Recherche Clinique:

Pr Patrice Lalive d'Épinay, Neurologie (Président)

Pr Michel Boulvain, Gynécologie-obstétrique, Université de Genève

Pre Nadia Elia, Anesthésiologie

Pr Marc Froissart, Centre de recherche clinique de Lausanne

Pre Anne Lübbecke-Wolff, chirurgie orthopédique et traumatologie de l'appareil moteur

Pre Klara Posfay-Barbe, Pédiatrie

Pr Patrick Saudan, Néphrologie

Pr Jean-Paul Vallée, Radiologie

Le jury a sélectionné les projets de recherche présentés oralement lors de cette Journée et désigné l'équipe de recherche lauréate du Prix de la recherche clinique.

### Le Prix de la Recherche Clinique :

Un diplôme ainsi qu'une somme de CHF 1'000.- seront décernés aux auteurs.

### Le Prix Médecine et Genre :

Ce prix vise à distinguer les projets de recherche intégrant des dimensions de sexe et genre dans la santé, évalués par un jury composé d'un panel de membres du groupe facultaire Médecine, Genre & Equité. Le-a gagnant-e recevra la somme de 1'000.- francs.

### Le Prix Soignant.e :

Ce prix est décerné à une présentation orale par un jury composé de personnes internes et externes aux HUG et à la Faculté de médecine, présidé par le Pr. Sebastian Probst, et recevra la somme de 1'000.- francs. Ce prix est impulsé par le programme 4 du plan stratégique Vision 20+5 "+ de recherche et d'innovation au quotidien" en collaboration avec le CRC et la Direction médicale.

### Le Prix du Meilleur Poster :

Un prix est attribué au meilleur poster assorti d'une somme de CHF 1'000.- francs, décerné par vote du public.

**BIOGRAPHIE DE LA CONFERENCIERE****« Infectious disease epidemiology: from HIV and Covid 19 to a more integrated approach »**

**Olivia Keiser**, is an Associate Professor of Epidemiology at the Institute of Global Health, University of Geneva and the Director of the [GRAPH Network](#).

Prof. Keiser is also the Head of the [Infectious Diseases and Mathematical Modelling Division](#) where her group takes an interdisciplinary research approach by combining mathematical modelling (including cost-effectiveness analyses), analyses of cohort data, data- and text mining, systematic reviews, and qualitative research techniques. Predominant areas of focus include HIV, tuberculosis, and COVID-19.

The group has been expanding their work to other infectious diseases and investigating the interaction between communicable and non-communicable diseases.

International collaboration are at the center of the group's activities with the overall goal of building capacity in low and middle income countries.

## PROGRAMME

### 13h30 Ouverture de la 16<sup>ème</sup> Journée de la recherche clinique

Pr. Jérôme Pugin, Vice-doyen à la recherche de la Faculté de médecine de l'Université de Genève, Président du Centre de Recherche Clinique

### 13h45 Présentations orales – Partie I (9 minutes de présentation, suivies de 3 minutes de discussion)

Modératrice : Dre Angela Huttner, médecin adjointe agrégée, responsable de l'unité d'investigation clinique, Centre de recherche clinique, HUG – Faculté de médecine

- |       |                  |  |
|-------|------------------|--|
| 13h50 | M. Abbas:        | Reconstruction of transmission chains of SARS-CoV-2 amidst multiple outbreaks in a geriatric acute-care hospital: a combined retrospective epidemiological and genomic study                                       |
| 14h02 | B. Gilbert       | Brief report: Assessment of mucosal barrier integrity using serological biomarkers in preclinical stages of rheumatoid arthritis   |
| 14h24 | A.-C. Mamez:     | T cell receptor sequencing reveals reduced clonal breadth of T-cell responses against SARS-CoV-2 after natural infection and vaccination in allogeneic hematopoietic stem cell transplant recipients               |
| 14h36 | M. Dominice Dao: | Cat and Shrimp: une étude qualitative sur les représentations de la péridurale pendant l'accouchement chez les femmes migrantes allophones   |
| 14h48 | T. Miholjic:     | Risk factors for dehiscence of operative incisions in newborns after laparotomy (sous la direction de la Prof B. Wildhaber)<br><i>Meilleur Travail de Mémoire Master 2022 (ex-aequo) de la Faculté de médecine</i> |

### 15h00 Conférence :

**"Infectious disease epidemiology: from HIV and Covid 19 to a more integrated approach"** Pre Olivia Keiser, Associate Professor of Epidemiology at the Institute of Global Health, University of Geneva and the Director of the GRAPH Network

### 15h30 – 16h10

#### Visite des posters et vote du public du meilleur poster

*Café et douceurs à disposition - Esplanade IMAD et Espace Médiation*

### 16h10 Présentations orales – Partie II

Modérateur : Pr. Jérôme Pugin, Vice-doyen à la recherche de la Faculté de médecine de l'Université de Genève, Président du Centre de Recherche Clinique

- |       |             |   |
|-------|-------------|---|
| 16h15 | T. Olivier: | Dose modification rules and availability of growth factor support: A cross-sectional study of head-to-head cancer trials used for US FDA approval from 2009 to 2021   |
| 16h27 | L. Pittet:  | A randomized trial of BCG to reduce covid-19 in healthcare workers (BRACE)  |
| 16h39 | A. Rhally:  | COVID-19 acute encephalopathy: in-between inflammation and neurodegeneration » (sous la direction du Prof Gilles Allali)<br><i>Meilleur Travail de Mémoire Master 2022 (ex-aequo) de la Faculté de médecine</i> |
| 16h51 | J. Meyer:   | Mapping of etiologies of computed tomography-proven acute colitis: a prospective cohort study   |
| 17h03 | F. Ozainne: | Psychological State and Exam Performance among Paramedics' Students in Geneva during the COVID-19 Pandemic: A Mixed Methods Study   |

### 17h15 Remise des Prix 2023

- Prix de la Recherche Clinique et du Meilleur Poster: Pr. Patrice Lalive d'Épinay, président du jury
- Prix Médecine et Genre : Pre Angèle Gayet-Ageron coordinatrice du groupe Médecine, Genre & Équité
- Prix Soignant.e : Pr. Sebastian Probst, Haute école de santé de Genève, président du jury

### 17h25 Clôture de la journée : Pr. Jérôme Pugin

### 17h30 Cocktail

**RECUEIL DES RESUMES**

**PRESENTATIONS ORALES**

**PAR  
ORDRE SELON LE PROGRAMME**

## RECONSTRUCTION OF TRANSMISSION CHAINS OF SARS-COV-2 AMIDST MULTIPLE OUTBREAKS IN A GERIATRIC ACUTE-CARE HOSPITAL: A COMBINED RETROSPECTIVE EPIDEMIOLOGICAL AND GENOMIC STUDY

*Mohamed Abbas, Anne Cori, Samuel Cordey, Florian Laubscher, Tomás Robalo Nunes, Ashleigh Myall, Julien Salamun, Philippe Huber, Dina Zekry, Virginie Prendki, Anne Iten, Laure Vieux, Valérie Sauvan, Christophe E Graf, Stephan Harbarth*

Service prévention et contrôle de l'infection, Laboratoire de virologie, Service de médecine de premier recours  
Département de réhabilitation et gériatrie, Service de médecine du travail

**Introduction:** There is ongoing uncertainty regarding transmission chains and the respective roles of healthcare workers (HCWs) and elderly patients in nosocomial outbreaks of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in geriatric settings.

**Méthode:** We performed a retrospective cohort study including patients with nosocomial Covid-19 in four outbreak-affected wards, and all SARS-CoV-2 RT-PCR positive HCWs from a geriatric care hospital that admitted both Covid-19 and non-Covid-19 patients during the first pandemic wave in Spring 2020. We combined epidemiological and genetic sequencing data using a Bayesian modelling framework, and reconstructed transmission dynamics of SARS-CoV-2 involving patients and HCWs, to determine who infected whom. We evaluated general transmission patterns according to case-type by deriving the proportion of infections attributed to each case type across posterior trees

**Résultats:** During the study period (1 March to 7 May 2020), we included 180 SARS-CoV-2 positive cases: 127 HCWs (91 HCWcovid, 36 HCWoutbreak) and 53 patients. The attack rates ranged from 10% to 19% for patients, and 21% for HCWs. We estimated that 16 importation events occurred with high confidence (4 patients, 12 HCWs) that jointly led to up to 41 secondary cases; in six additional cases (5 HCWs, 1 patient), importation was possible with a posterior probability between 10% and 50%. Most patient-to-patient transmission events involved [TRUNCATED]

**Conclusion:** Most importation events were linked to HCW. Unexpectedly, transmission between HCWcovid was more limited than transmission between patients and HCWoutbreak. This finding highlights gaps in infection control and suggests the possible areas of improvements to limit the extent of nosocomial transmission.

## BRIEF REPORT : ASSESSMENT OF MUCOSAL BARRIER INTEGRITY USING SEROLOGICAL BIOMARKERS IN PRECLINICAL STAGES OF RHEUMATOID ARTHRITIS.

*Benoît Thomas P. Gilbert, Céline Lamacchia, Lena Amend, Till Strowig, Emiliana Rodriguez, Gaby Palmer and Axel Finckh*

Rhumatologie, HUG. - Department of Pathology and Immunology, Faculty of Medicine.

**Introduction:** The pathogenesis of rheumatoid arthritis (RA) is believed to initiate at mucosal sites. The so-called 'mucosal origin hypothesis of RA' postulates an increased intestinal permeability before disease onset. Several biomarkers, including lipopolysaccharide binding protein (LBP) and intestinal fatty acid binding protein (I-FABP), have been proposed to reflect gut mucosa permeability and integrity, while serum calprotectin is a new inflammation marker proposed in RA.

**Méthode:** We analyzed serum samples of individuals genetically at increased risk of RA in a nested-case-control study. Participants from a longitudinal cohort of first-degree relatives of RA patients (SCREEN-RA cohort) were divided into three pre-clinical stages of RA, based on the presence of risk factors for subsequent RA onset: 1) low-risk healthy asymptomatic controls; 2) intermediate-risk individuals without symptoms, but with RA-associated auto-immunity; 3) high-risk individuals with clinically suspect arthralgias. Five patients with newly diagnosed RA were also sampled. Serum LBP, I-FABP and calprotectin were measured using commercially available ELISA kits.

**Résultats:** We included 180 individuals genetically at increased risk for RA: 84 asymptomatic controls, 53 individuals with RA-associated autoimmunity and 38 high risk individuals. Serum LBP, I-FABP or calprotectin concentrations did not differ between individuals in different pre-clinical stages of RA.

**Conclusion:** Based on the serum biomarkers LBP, I-FABP and calprotectin, we could not detect any evidence for intestinal injury in pre-clinical stages of RA.

## T CELL RECEPTOR SEQUENCING REVEALS REDUCED CLONAL BREADTH OF T-CELL RESPONSES AGAINST SARS-COV-2 AFTER NATURAL INFECTION AND VACCINATION IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS

Amandine Pradier 1-2, **Anne-Claire Mamez** 2, Caroline Stephan 1, Federica Giannotti 1, Stavroula Masouridi-Levrat 1, Sissi Wang 2, Sarah Morin 1, Dionysios Neofytos 3, Diem-Lan Vu 3, Adstrid Melotti 2, Isabelle Arm 4, Christiane Eberhardt 5, Jérôme Tamburini 2, Laurent Kaiser 3-4, Yves Chalandon 1-2, Federico Simonetta 1-2

1-Service d'hématologie-HUG- 2-Centre de recherche translationnelle en Oncohématologie, Faculté de Médecine, Université de Genève- 3-Service des maladies infectieuses-HUG- 4-Laboratoire de virologie -HUG- 5-Centre de vaccinologie-HUG

**Introduction:** Allogeneic hematopoietic stem cell transplantation (HSCT) recipients have a higher risk of developing severe coronavirus disease (COVID-19) and a higher mortality rate compared with the general population potentially also as a consequence of their reduced ability to respond to vaccination.

**Méthode:** To evaluate the magnitude and breadth of T-cell responses against SARS-CoV-2 in allogeneic HSCT recipients, we carried out high-throughput T cell receptor (TCR) repertoire profiling on cells recovered from allogeneic HSCT recipients or healthy controls (HC) after COVID-19 natural infection (n=10 and n=11 respectively) or messenger RNA (mRNA)-based vaccination (n=11 and n=10).

**Résultats:** T-cell receptor (TCR) beta sequencing identified SARS-CoV-2 specific T-cell clonotypes in both HC and HSCT recipients after COVID-19 infection and after vaccination. No difference was observed in the proportion of T cells specific for SARS-CoV-2 between HSCT recipients and HC. However, the analysis showed that the diversity of the SARS-CoV-2-specific T-cell clonotypes was significantly reduced in HSCT recipients compared with HC after COVID-19 infection and vaccination.

**Conclusion:** The clonal breadth defect was associated with increased T-cell clonality after HSCT, pointing to the reduced diversity of the TCR repertoire as a mechanism leading to impaired cellular responses against SARS-CoV-2 in HSCT recipients.

## CAT AND SHRIMP : UNE ETUDE QUALITATIVE SUR LES REPRESENTATIONS DE LA PERIDURALE PENDANT L'ACCOUCHEMENT CHEZ LES FEMMES MIGRANTES ALLOPHONES

Melissa Dominicé Dao<sup>1</sup>, Désirée Gerosa<sup>2</sup>, Iris Pélieu<sup>3</sup>, Guy Haller<sup>4</sup>

1 Service de médecine de premier recours, DMPR - 2 Service d'obstétrique, DFEA - 3 Service d'anesthésiologie, DMA - 4 Service Qualité des Soins, DM

**Introduction:** Les femmes migrantes en Occident présentent un taux plus faible d'analgésie péridurale pendant l'accouchement. Leur choix de recourir à une péridurale est impacté par : la barrière linguistique, le statut socio-économique, la connaissance de la procédure et les mauvaises expériences de soins de santé. Notre étude visait à identifier les informations souhaitées par les femmes concernant l'analgésie péridurale pendant l'accouchement afin de développer du matériel vidéo dans les langues parlées par les parturientes.

**Méthode:** Nous avons réalisé une étude qualitative avec des femmes migrantes allophones recrutées via des associations dispensant des cours de français. Des focus groups avec interprètes ont été menés dans les langues principales parlées par les parturientes allophones aux HUG. Une analyse thématique de leur transcription a été réalisée.

**Résultats:** 40 femmes parlant albanais, arabe, farsi/dari, tamoul ou tigrigna ont participé aux 5 focus groups. 34/40 femmes avaient accouché. Leurs connaissances de la péridurale étaient sommaires. Elles exprimaient de fortes craintes des conséquences négatives de la péridurale. Une minorité de femmes défendait une position pro-épidurale, à l'encontre de la vision traditionnelle, avec des stratégies narratives singulières.

**Conclusion:** Notre étude montre que la décision des femmes migrantes allophone de recourir à la péridurale pendant l'accouchement se base sur des interactions complexes entre leurs connaissances, leurs expériences, leurs traditions, leur positionnement social et leur confiance envers le système de santé. Par une information adaptée, les professionnels de santé peuvent soutenir les femmes qui souhaitent une péridurale, quelles que soient leurs traditions culturelles.



## RISK FACTORS FOR DEHISCENCE OF OPERATIVE INCISIONS IN NEWBORNS AFTER LAPAROTOMY

*Miholjic Tina B. S. (1), Baud Olivier (2), Iranmanesh Pouya (3), Wildhaber Barbara E.(1)*

**Meilleur Travail de Mémoire de Master de Médecine 2022 (ex-aequo)**

1. Division of Child and Adolescent Surgery, Department of Pediatrics, Gynecology, and Obstetrics, Geneva University Hospitals, University of Geneva, Geneva, Switzerland- 2. Division of Neonatal and Pediatric Intensive Care, Department of Pediatrics, Gynecology, and Obstetrics, Geneva University Hospitals, University of Geneva, Geneva, Switzerland- 3. Division of Digestive Surgery, Department of Surgery, Geneva University Hospitals, University of Geneva, Geneva, Switzerland

**Introduction:** Surgical wound dehiscence (SWD) in neonates is a life-threatening complication. The aim was to define risk factors of postoperative incision dehiscence in this population.

**Méthode:** Data of 144 patients from 2010 to 2020 were analyzed retrospectively. Full-term or preterm newborns up to 42 weeks of amenorrhea (adjusted) who underwent laparotomy within 30 days after birth were included. Descriptive patient information, perioperative and maternal data were collected. SWD was defined as any separation of cutaneous edges of postoperative wounds.

**Résultats:** Overall, SWD occurred in 16/144 (11%) patients, with a significantly increased incidence in preterm newborns (13/59, 22%) compared to full-term newborns (3/85, 4%),  $p < 0.001$ . SWD was significantly associated with exposure to postnatal steroids (60% vs. 4%,  $p < 0.001$ ) and non-steroidal anti-inflammatory drugs (25% vs. 4%,  $p < 0.01$ ), invasive ventilation duration before surgery (median at 10 vs. 0 days,  $p < 0.001$ ), preoperative low hemoglobin concentration (115 vs. 147 g/L,  $p < 0.001$ ) and platelets counts (127 vs. 295 G/L,  $p < 0.001$ ), non-absorbable suture material (43% vs. 8%,  $p < 0.001$ ), the presence of ostomies (69% vs. 18%,  $p < 0.001$ ), positive bacteriological wound cultures (50% vs 6%,  $p < 0.001$ ), and re-laparotomy (25% vs. 3%,  $p < 0.01$ ). 13 of 16 patients with SWD presented necrotizing enterocolitis/intestinal perforations (81%,  $p < 0.001$ ).

**Conclusion:** This study identified prematurity and a number of other factors linked to the child's general condition as risk factors for SWD. These findings may help physicians identify at-risk patients and also provide better counseling for parents.

## DOSE MODIFICATION RULES AND AVAILABILITY OF GROWTH FACTOR SUPPORT: A CROSS-SECTIONAL STUDY OF HEAD-TO-HEAD CANCER TRIALS USED FOR US FDA APPROVAL FROM 2009 TO 2021

*Timothée Olivier, Alyson Haslam, Vinay Prasad*

Service d'oncologie - HUG

**Introduction:** Different drug modification rules or growth factor support guidance may affect the results in oncology randomised controlled trials. We aimed to estimate the prevalence of unequal rules for dose modification rules or the use of myeloid growth factors in head-to-head registration Food and Drug Administration trials.

**Méthode:** This cross-sectional analysis included all head-to-head registration randomised controlled trials leading to a US Food and Drug Administration approval between 2009 and 2021. Trials examined anti-cancer drugs in the advanced or metastatic setting where a comparison could be made between arms regarding either dose modification rules or myeloid growth factors recommendations. Sixty-two registration trials met inclusion criteria. Information abstracted for each trial included tumour type, setting, phase, and type of sponsor. We assessed, according to pre-specified rules, imbalance in drug modification rules, myeloid growth factors recommendations or both.

**Résultats:** We find 40 of 62 (65%) selected trials have unequal rules for dose medication, granulocyte colony-stimulating factor (G-CSF) use or both. Six trials (10%) had rules favouring the control arm, while 55% of selected trials (34/62) favoured the experimental arm. Among these, 50% (17/34) had unequal drug modification rules, 41% (14/34) had unequal G-CSF rules and 9% contained both (3/34).

**Conclusion:** We find that 55% of trials testing anti-cancer drugs against each other used protocol rules that favoured the experimental arm. This leaves open the question of whether new molecules are truly superior to older molecules or if instead different outcomes are due to more aggressive dosing or growth factor support. Trials should utilise equal rules for dose medication and G-CSF support.

## A RANDOMIZED TRIAL OF BCG TO REDUCE COVID-19 IN HEALTHCARE WORKERS (BRACE)

*Pittet LF, Messina NL, Orsini F, Moore CL, Abruzzo V, Barry S, Bonnici R, Bonten M, Campbell J, Croda J, Dalcolmo M, Gardiner K, Gell G, Germano S, Gomes-Silva A, Goodall C, Gwee A, Jamieson T, Jardim B, Kollman TR, Lacerda MVG, Lee KJ, Legge D, Lucas M, Lynn DJ, Manning L, Marshall HS, McDonald E, Munns CF, Nicholson S, Perrett KP, Prat-Aymerich C, Richmond PC, Rodriguez-Baño J, dos Santos G, da Silva PV, Teo JW, Villanueva P, Warris A, Wood NJ, Davidson A, Curtis N & the BRACE trial Consortium Group*

Service de pédiatrie Générale, HUG

**Introduction:** The bacille Calmette-Guérin (BCG) vaccine has immunomodulatory 'off-target' effects hypothesised to protect against COVID-19.

**Méthode:** In this international, multicentre, double-blind, placebo-controlled trial, healthcare workers were randomised to BCG-Denmark vaccination or saline placebo and followed for 12 months. The primary outcomes of symptomatic and severe COVID-19 were assessed at 6 months. A total of 3988 participants were randomised; recruitment ceased prior to reaching the planned sample size due to the availability of COVID-19 vaccines.

**Résultats:** The estimated risk of symptomatic COVID-19 by 6 months was higher in the BCG group (14.7%) compared with the placebo group (12.3%; risk difference +2.4%; 95% confidence interval [CI] -0.7% to +5.5%; p=0.13). The risk of severe COVID-19 by 6 months (comprising mainly those reporting unable to work for ≥3 days) was also higher in the BCG group (7.6%) compared with the placebo group (6.5%; risk difference +1.1%; 95%CI -1.2% to +3.5%; p=0.34). In supplementary and sensitivity analyses using less conservative censoring rules, the risk differences were similar but CI narrower.

**Conclusion:** The risk of any COVID-19 episode was greater in the BCG group (hazard ratio 1.23; 95% CI 0.96 to 1.59). BCG-Denmark vaccination did not reduce the likelihood of COVID-19 in healthcare workers. No safety concerns were identified. (ClinicalTrials.gov NCT04327206.)

## COVID-19 ACUTE ENCEPHALOPATHY: IN-BETWEEN INFLAMMATION AND NEURODEGENERATION ?

*Alexandra Rhally, Alessandra Griffa, Giulia Bommarito, Stéphane Kremer, Marjolaine Uginet, Gautier Breville, Patrick Stancu, Alice Accoroni, Frédéric Assal, Patrice H. Lalive, Karl-Olof Lövblad, Gilles Allali*

### Meilleur Travail de Mémoire de Master de Médecine 2022 (ex-aequo)

Faculty of Medicine, University of Geneva, Geneva, Switzerland - Department of Clinical Neurosciences, Division of Neurology, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Geneva, Switzerland- Institute of Bioengineering, Center of Neuroprosthetics, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland- Service d'imagerie 2, Hôpitaux Universitaires de Strasbourg, Strasbourg, France- Engineering Science, Computer Science and Imaging Laboratory (ICube), Integrative Multimodal Imaging in Healthcare, UMR 7357, University of Strasbourg-CNRS, Strasbourg, France- Diagnostic Department, Division of Laboratory Medicine, Geneva University Hospitals, Geneva, Switzerland- Department of Pathology and Immunology, Faculty of Medicine, University of Geneva, Geneva, Switzerland- Division of Neuroradiology, Geneva University Hospitals and University of Geneva, Geneva, Switzerland- Department of Neurology, Division of Cognitive and Motor Aging, Albert Einstein College of Medicine, Yeshiva University, Bronx, NY, USA- Leenaards Memory Center, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland

**Introduction:** Acute encephalopathy (AE) is among the most common neurological complications of COVID-19 and associated with higher mortality. Exploring its link with inflammation and neurodegeneration could improve our management of it. The objective of these studies was to examine i) the link between inflammation and microstructural changes in white-matter tracts and ii) the role of steroids treatment in COVID-19-AE.

**Méthode:** We investigated in 20 patients with COVID-19-AE (mean age: 67.3 years; 10% female) the association between systemic inflammation, measured by C-reactive protein (CRP) and brain microstructural changes, measured by apparent diffusion coefficient (ADC), in nine regions associated with delirium. Secondly, we explored differences in clinical features and outcome between a COVID-19-AE patients' group treated with high-dose steroids (N= 12; mean age: 73.6; 33% female) compared to a non-treated group (N= 24; mean age: 70.1; 4% female).

**Résultats:** CRP positively correlated with ADC in the anterior corona radiata ( $\beta = 0.60$ ,  $t(15) = 2.95$ ,  $p = 0.0089$ ), genu of the corpus callosum ( $\beta = 0.60$ ,  $t(13) = 3.16$ ,  $p = 0.0064$ ) and external capsule ( $\beta = 0.61$ ,  $t(15) = 2.97$ ,  $p = 0.0068$ ). Modified Rankin scale was comparable between treated and non-treated groups ( $p = .539$ ), but the steroids group had longer hospitalization ( $p = .0056$ ) and AE duration ( $p = .0065$ ).

**Conclusion:** In COVID-19-AE, our findings indicate an association between white-matter changes and systemic inflammation and suggest that steroids do not improve clinical outcomes. Research regarding the long-term role of neurodegeneration in COVID-19-AE is currently conducted to understand the pathophysiological mechanisms linking COVID-19 inflammation and neurodegeneration.

## MAPPING OF ETIOLOGIES OF COMPUTED TOMOGRAPHY-PROVEN ACUTE COLITIS: A PROSPECTIVE COHORT STUDY

*J. Meyer*<sup>1</sup>, *J. Schrenzel*<sup>2</sup>, *A. Balaphas*<sup>1</sup>, *V. Delaune*<sup>1</sup>, *M. Abbas*<sup>2</sup>, *P. Morel*<sup>1</sup>, *G. Puppa*<sup>3</sup>, *L. Rubbia-Brandt*<sup>3</sup>, *P. Bichard*<sup>4</sup>, *J.-L. Frossard*<sup>4</sup>, *C. Toso*<sup>1</sup>, *N. Buchs*<sup>1</sup>, *F. Ris*<sup>1</sup>

<sup>1</sup>Digestive surgery, Geneva University Hospital, Geneva,- <sup>2</sup>Infectious diseases, Geneva University Hospital, Geneva,- <sup>3</sup>Pathology, Geneva University Hospital, Geneva,- <sup>4</sup>Gastroenterology, Geneva University Hospital, Geneva

**Introduction:** The etiologies of computed tomography-proven acute colitis have never been reported. Our objective was to describe the etiologies of acute colitis and to identify patients who require diagnostic endoscopy for excluding colorectal cancer and inflammatory bowel disease (IBD).

**Méthode:** Patients with symptoms of gastrointestinal infection and colonic inflammation on CT were prospectively included. Those immunosuppressed, with history of colorectal cancer or IBD were excluded. Microbiological analysis of the feces was performed using PCR assays BD-Max and FilmArray (GI panel,) and fecal cultures. Fecal calprotectin was determined. Patients with negative BD-Max underwent colonoscopy. The study was registered into clinicaltrials.gov (NCT02709213).

**Résultats:** 179 patients were included. Patients with infectious colitis(n=103,57.5%) were positive for *Campylobacter* spp.(n=57,55.3%), *Escherichia coli* spp.(n=8,7.8%), *Clostridioides difficile* (n=23,22.3%), *Salmonella* spp.(n=9,8.7%), viruses(n=7,6.8%), *Shigella* spp.(n=6,5.8%), and others(n=6,5.8%). 86 patients underwent colonoscopy, which was compatible with ischemic colitis in 18 patients(10.1%) and IBD in 4 patients(2.2%). Fecal calprotectin was elevated in all patients, with a mean concentration of 1922.1±2895.6µg/g, and was the highest in patients with IBD (8511±9438µg/g, p<0.001). After exclusion of patients with infectious etiology, a fecal calprotectin >625µg/g allowed identifying patients with IBD with an area under ROC curve of 85.1%.

**Conclusion:** To conclude, computed tomography-proven colitis was of infectious etiology in 57.5% of patients. The main pathogens identified were *Campylobacter* spp. (55.3%), *Clostridioides difficile* (22.3%) and *Salmonella* spp. (8.7%). Ischemic colitis (10.1%) and IBD (2.2%) were seldom represented. No colorectal cancer was found.

## PSYCHOLOGICAL STATE AND EXAM PERFORMANCE AMONG PARAMEDICS' STUDENTS IN GENEVA DURING THE COVID-19 PANDEMIC: A MIXED METHODS STUDY

*Florian Ozainne*<sup>1</sup>, *Lou Rauss*<sup>1,2</sup> and *Loric Stuby*<sup>2</sup>

<sup>1</sup> École Supérieure de Soins Ambulanciers, College of Higher Education in Prehospital Care, CH-1231 Conches, Switzerland- <sup>2</sup> Genève TEAM Ambulances, Emergency Medical Services, CH-1201 Geneva, Switzerland

**Introduction:** In March 2020, the WHO announced the COVID-19 outbreak obliging schools switching to distance courses, cancellation of specific professional teaching methods and clinical practice.

Distance learning has some benefits (less travel time, flexibility, learn at own pace). The limitations are distractions, internet connection and lack of space. Isolation in social networks, lack of interaction and emotional support, and physical isolation were associated with negative mental health issues.

The rationale for this study was to assess how distance learning impacts knowledge, practical skills, and psychological state.

**Méthode:** This study was conducted using mixed methods, including performance assessment of a specific exam regarding notes compared between pre-pandemic and pandemic promotion, the 12-item General Health Questionnaire, and semi-structured interviews.

**Résultats:** The mean (95%CI) examination notes were different among groups: pre-pandemic 4.99 (4.91 to 5.07) versus pandemic 4.75 (4.63 to 4.88). The GHQ-12 found that 16 students (30.8%) were healthy, 11 (21.2%) were at risk, and 25 (48.1%) were in psychological distress. The semi-structured interviews provided insight into the impact of the pandemic.

**Conclusion:** The period of the COVID-19 pandemic appears to have had an impact on the psychological state of the paramedic students. There may have been an effect on their theoretical knowledge performance.

**PRESENTATIONS POSTERS**

**PAR**

**ORDRE ALPHABETIQUE SELON**

**LE NOM DE L'AUTEUR AYANT SOUMIS**

**P1****IMPACT OF OBESITY ON DEXAMETHASONE PHARMACOKINETIC IN COVID-19 HOSPITALIZED PATIENTS: AN EXPLORATORY OBSERVATIONAL STUDY**

*Kenza Abouir*<sup>1,2</sup>, *Pauline Gosselin*<sup>3</sup>, *Stéphane Guerrier*<sup>2, 4</sup>, *Youssef Daali*<sup>1,2,5</sup>, *Jules Desmeules*<sup>1,2,5</sup>, *Jean-Luc Reny*<sup>3</sup>, *Olivier Grosgrin*<sup>3</sup>, *Caroline Samer*<sup>1,5</sup>, *Alexandra Calmy*<sup>6</sup>, *Kuntheavy Roseline Ing Lorenzini*<sup>1</sup>

1. Division of Clinical Pharmacology and Toxicology, Geneva University Hospitals, Geneva, Switzerland  
2. Institute of Pharmaceutical Sciences of Western Switzerland, University of Geneva, Geneva, Switzerland- 3. Department and Division of Primary Care Medicine, University Hospital of Geneva, Geneva, Switzerland. - 4. Geneva School of Economics and Management, University of Geneva, Geneva, Switzerland- 5. Swiss Centre for Applied Human Toxicology (SCAHT), Geneva, Switzerland- 6. Division of Infectious Diseases, Geneva University Hospitals, Geneva, Switzerland

**Introduction:** During the last pandemic, dexamethasone (DEX) improved survival in moderately /severely ill patients. Systemic corticosteroids are recommended by the World Health Organization (WHO) for treating patients with severe or critical COVID-19. Studies have shown a high incidence of obesity in patients admitted to intensive care for SARS-CoV-2, highlighting this as a risk factor for developing severe COVID-19. More information on adjusting the dose of DEX according to BMI or body weight is needed. We conducted an exploratory study to assess obesity's impact on DEX pharmacokinetics in COVID-19 inpatients.

**Méthode:** Two groups of patients were recruited: one with a BMI between 18.5 and 25 kg/m<sup>2</sup> (normal weight) and one with a BMI  $\geq$  30 kg/m<sup>2</sup> (obese). All 30 patients in the study were hospitalized at the University Hospitals of Geneva (Switzerland) with a diagnosis of moderate to severe COVID-19 requiring oxygen and received the standard treatment of daily 6 mg oral DEX. In addition, capillary blood samples were collected before and after DEX administration to assess DEX PK's profile.

**Résultats:** The mean DEX AUC<sub>0-8h</sub> and C<sub>max</sub> were lower in the obese compared to the normal weight group (572  $\pm$  258 vs. 926  $\pm$  552 ng. h/ml and 138  $\pm$  68 vs. 203  $\pm$  126 ng/ml, respectively). We observed a decrease in DEX AUC<sub>0-8h</sub> of 4% per additional BMI unit and defined a significant relationship between weight and DEX AUC<sub>0-8h</sub> (P-value 0.004, 95% CI: 2% - 7%). We also observed a statistically significant impact of gender. In women, DEX AUC<sub>0-8h</sub> increased by 214% compared to men (P-value <0.001, 95% CI: 154 - 298%). Similarly, the mean C<sub>max</sub> increased by 205% in women (P-value <0.001, 95% CI: 141%-297%). On the other hand, exploratory treatment outcomes, such as the length of hospitalization, did not show any significant difference between obese and normal-weight groups.

**Conclusion:** We demonstrated a statistically significant difference in mean DEX AUC<sub>0-8h</sub> and C<sub>max</sub> between the normal and obese groups. Therefore, we conclude that different dosing would be needed to reach DEX similar exposure in obese and normal-weight COVID-19 hospitalized patients

**P2****ACCOUCHEMENT TRAUMATIQUE ET TROUBLE DE STRESS POST-TRAUMATIQUE LIE A L'ACCOUCHEMENT EN TEMPS DE LA PANDEMIE DE COVID-19 : UNE ETUDE DE COHORTE PROSPECTIVE**

*Lamyae Benzakour*, *Angèle Gayet-Ageron*, *Maria Jubin*, *Francesca Suardi*, *Chloé Pallud*, *Fanny-Blanche Lombard*, *Beatrice Quagliarini*, *Manuella Epiney*

Service de psychiatrie de liaison et d'intervention de crise (SPLIC), Service d'Épidémiologie clinique, Service d'Obstétrique, HUG

**Introduction:** Le trouble de stress post-traumatique (TSPT) lié à l'accouchement concerne 4,7 % des mères et constitue un enjeu de santé publique. Des données précises sur l'impact des facteurs de stress liés à la pandémie de COVID-19 sur ce trouble manquent.

**Méthode:** Notre objectif était d'estimer la prévalence de l'accouchement traumatique et du TSPT lié à l'accouchement et d'analyser les facteurs de risque et de protection impliqués, y compris les facteurs de risque liés à la pandémie de COVID-19. Nous avons mené une étude de cohorte prospective de femmes ayant accouché aux Hôpitaux Universitaires de Genève entre le 25 janvier 2021 et le 10 mars 2022 et évalué les femmes dans les 3 jours suivant l'accouchement et à un mois post-partum.

**Résultats:** Parmi les 254 participantes incluses, 35 (21,1 %, IC 95 % : 15,1-28,1 %) ont vécu un accouchement traumatique et 15 (9,1 %, IC 95 % : 5,2-14,6 %) ont développé un TSPT lié à l'accouchement à un mois post-partum selon le DSM-5. Des facteurs de risque connus du TSPT lié à l'accouchement tels que la dépression prénatale, les événements traumatiques antérieurs, les complications néonatales, la détresse périnatale et la dissociation périnatale, ont été confirmés, mais aussi l'accès limité aux soins prénatals en période de COVID-19.

**Conclusion:** Cette étude met en évidence l'intérêt d'un dépistage des symptômes psychiques après l'accouchement et d'interventions précoces afin de réduire le risque TSPT lié à l'accouchement et une influence modeste des facteurs de stress directement liés au COVID-19.

**P3****SEX DIFFERENCES IN DEMENTIA WITH LEWY BODIES: AN IMAGING STUDY OF NEUROTRANSMISSION PATHWAYS**

*Cecilia Boccalini, Nicolas Nicastro, Debora Elisa Peretti, Silvia Paola Caminiti, Daniela Perani, Valentina Garibotto*

Laboratory of Neuroimaging and Innovative Molecular Tracers (NIMTlab), Faculty of Medicine, University of Geneva, Geneva, Switzerland

**Introduction:** Dementia with Lewy bodies (DLB) is characterized by a wide clinical and biological heterogeneity, with sex differences reported in both clinical and pathologically confirmed DLB cohorts. No research evidence is available on sex differences regarding molecular neurotransmission. This study aimed to assess whether sex can influence neurotransmitter systems in patients with probable DLB (pDLB).

**Méthode:** We included 123 pDLB patients (male/female: 77/46) and 78 control subjects (male/female: 34/44) for comparison, who underwent 123I-FP-CIT SPECT imaging. We assessed sex differences in the dopaminergic activity of the nigrostriatal and mesolimbic systems using regional-based and voxel-wise analyses of 123I-FP-CIT binding. We tested whether sex-specific binding alterations would also pertain to the serotonergic and noradrenergic systems by applying spatial correlation analyses. We applied molecular connectivity analyses to assess potential sex differences in the dopaminergic pathways.

**Résultats:** We found comparable 123I-FP-CIT binding decreases in the striatum for pDLB males and females compared to controls. However, pDLB females showed lower binding in the extrastriatal projections of the nigrostriatal and mesolimbic dopaminergic systems compared to pDLB males. According to the spatial correlation analysis, sex-specific molecular alterations were also associated with serotonergic and noradrenergic systems. Nigrostriatal and mesolimbic systems' connectivity was impaired in both groups, with males showing local alterations and females presenting long-distance disconnections between subcortical and cortical regions.

**Conclusion:** Sex-specific differences in 123I-FP-CIT binding were found in our cohort, namely, a trend for lower 123I-FP-CIT binding in females, significant in the presence of a pDLB diagnosis. pDLB females showed also different patterns of connectivity compared to males, mostly involving extrastriatal regions. The results suggest the presence of a sex-related regional vulnerability to alpha-synuclein pathology, possibly complicated also by the higher prevalence of Alzheimer's disease co-pathology in females, as previously reported in pDLB populations.

**P4****IMPACT DU TOUCHER-MASSAGE SUR LE VECU DES PATIENT.E.S SOUFFRANT DE DOULEUR CHRONIQUE**

• *Monique Boegli, infirmière, Service d'anesthésie, équipe antalgie aigüe et complexe, HUG* • *Catherine Bollondi Pauly, infirmière spécialiste clinique, Pôle des pratiques professionnelles, Direction des soins, Hôpitaux universitaires de Genève (HUG)* • *Gora Da Rocha, Doyenne, Professeure HES ordinaire, Haute Ecole de Santé Vaud, Lausanne. Avec la collaboration de:* • *François Curtin, Service de pharmacologie clinique et de la toxicologie, HUG* • *Christophe Luthy, Service médecine interne et Réadaptation, Beau-Séjour, HUG* • *Christine Cedraschi, Service de pharmacologie clinique et de la toxicologie, Centre multidisciplinaire de la douleur, Réadaptation médicale générale, HUG* • *Jules Desmeules, Service de pharmacologie clinique et de la toxicologie, Centre multidisciplinaire de la douleur, HUG*

**Introduction:** Les interventions non pharmacologiques sont de plus en plus utilisées en complément du traitement de la douleur chronique et sont fortement recommandées. L'objectif de cette étude était d'évaluer l'impact du Toucher-massage (TM) sur l'expérience de patient.e.s présentant des douleurs chroniques et hospitalisé.e.s dans un service de réadaptation, ainsi que celles des soignant.e.s.

**Méthode:** Un essai clinique en grappe non randomisé avec une partie qualitative a été mené. Le groupe intervention (n=39) a reçu le TM et le groupe contrôle (n=43) un massage des pieds avec appareil. L'impression de changement dans la perception de douleur et les résultats secondaires (intensité de douleur, anxiété/dépression, relation patient.e-soignant.e) ont été mesurés avant et après intervention. Seize entretiens ont été menés avec des patient.e.s suite au TM. Deux focus group ont été menés avec 16 soignant.e.s (n=10 pour le TM ; n=6 pour le massage avec appareil).

**Résultats:** Le type d'intervention a eu un faible effet (d de Cohen = 0,42) sur l'impression de changement des patient.e.s. Le groupe intervention a eu tendance à percevoir plus de changements que le groupe contrôle. Six thèmes ont émergé des entretiens : se faire du bien, relaxation, lien avec le massothérapeute, environnement serein, souvenirs qui émergent. Les soignant.e.s ont reportés une perception de résultats positifs en lien avec le TM, ainsi que des effets positifs sur la relation patient.e-soignant.e. Quelques barrières ont été identifiées en lien avec l'implémentation des interventions.

**Conclusion:** Cette étude montre, grâce à une méthodologie solide, que le TM a un impact positif sur la perception du soulagement de la douleur chez les patient.e.s souffrant de douleurs chroniques. En outre, le TM est une approche qui peut être proposée aux patient.e.s présentant des douleurs chroniques.

**P5****NEUROLOGICAL SYMPTOM IMPROVEMENT AFTER RE-IRRADIATION IN PATIENTS WITH DIFFUSE INTRINSIC PONTINE GLIOMA (DIPG): A RETROSPECTIVE ANALYSIS OF THE SIOP-E-HGG/DIPG PROJECT.**

*Lara Chavaz*<sup>1,2</sup>, *Geert O. Janssens*<sup>3,4</sup>, *Stephanie Bolle*<sup>5</sup>, *Henry Mandeville*<sup>6</sup>, *Monica Ramos-Albiac*<sup>7</sup>, *Karen van Beek*<sup>8</sup>, *Helen Benghiat*<sup>9</sup>, *Bianca Hoeben*<sup>3,4</sup>, *Andres Morales La Madrid*<sup>10</sup>, *Clemens Seidel*<sup>11</sup>, *Rolf-Dieter Kortmann*<sup>11</sup>, *Darren Hargrave*<sup>12</sup>, *Lorenza Gandola*<sup>13</sup>, *Emilia Pecori*<sup>13</sup>, *Dannis G. van Vuurden*<sup>4,14</sup>, *Veronica Biassoni*<sup>15</sup>, *Maura Massimino*<sup>15</sup>, *Christof Kramm*<sup>16</sup>, *Andre O. von Bueren*<sup>1,2</sup>

1 Department of Pediatrics, Gynecology and Obstetrics, Division of Pediatric Hematology and Oncology, University Hospital of Geneva, Geneva, Switzerland.- 2 Cansearch Research platform for pediatric oncology and hematology, Faculty of Medicine, Department of Pediatrics, Gynecology and Obstetrics, University of Geneva, Geneva, Switzerland.- 3 Department of Radiation Oncology, University Medical Center Utrecht, Utrecht, the Netherlands- 4 Princess Maxima Center for Pediatric Oncology, Utrecht, the Netherlands- 5 Department of Radiation Oncology, Gustave Roussy Cancer Institute, Paris Saclay University, Villejuif, France - 6 Department of Radiotherapy, The Royal Marsden Hospital and Institute of Cancer Research, Sutton, United Kingdom- 7 Department of Radiation Oncology, Hospital Vall d'Hebron, Barcelona, Spain- 8 Department of Radiation Oncology, Leuven Cancer Institute, University Hospitals Leuven, Leuven, Belgium- 9 Department of Clinical Oncology, University Hospital Birmingham, Birmingham, United Kingdom - 10 Department of Pediatric Hematology and Oncology, Hospital Sant Joan de Deu, Barcelona, Spain- 11 Department of Radiation-Oncology, University Hospital Leipzig, Leipzig, Germany- 12 Pediatric Oncology Unit, Great Ormond Street Hospital for Children, London, United Kingdom - 13 Pediatric Radiotherapy Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy- 14 Emma Children's Hospital, Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Pediatric Oncology, Amsterdam, The Netherlands - 15 Pediatrics Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy- 16 Division of Pediatric Hematology and Oncology, University Hospital Goettingen, Goettingen, Germany

**Introduction:** The aim of this study is to investigate the spectrum of neurological triad improvement in patients with diffuse intrinsic pontine glioma (DIPG) treated by re-irradiation (re-RT) at first progression.

**Méthode:** We carried out a re-analysis of the SIOP-E retrospective DIPG cohort by investigations the clinical benefits after re-RT with a focus on the neurological triad (cranial nerve deficits, ataxia, and long tract signs). Patients were categorized as "responding" or "non-responding" to re-RT. To assess the independence between patients' characteristics and clinical benefits, we used a Chi-square or Fisher's exact test. Survival according to clinical response to re-RT was calculated by the Kaplan-Meier method.

**Résultats:** 77% (n = 24/31) of patients had any clinical benefit after re-RT. Among 25/31 well-documented patients, 44% (n = 11/25) had improvement in cranial nerve palsies, 50% (n = 10/25) in long-tract signs, and 44% (n = 11/25) in cerebellar signs. Clinical benefits were observed in at least 1, 2 or 3 out of 3 symptoms of the DIPG triad, in 64%, 40%, and 24%, respectively. Patients irradiated with a dose  $\geq 20$  Gy versus  $< 20$  Gy may improve slightly better regarding ataxia (67% versus 23%, p-value = 0.028).

**Conclusion:** A median re-irradiation dose of 20 Gy provides a neurological benefit in two-thirds of patients with an improvement of at least one symptom of the triad. DIPG patients receiving  $\geq 20$  Gy appear to improve slightly better regarding ataxia; however, we need more data to determine whether dose escalation up to 30 Gy provides additional benefits.

**P6****IDENTIFIER LES FACTEURS FACILITATEURS AINSI QUE LES BARRIERES A LA PARTICIPATION DES FEMMES DANS LA RECHERCHE CLINIQUE SUR LE VIH EN SUISSE : UNE ETUDE QUALITATIVE.**

*Nelly Courvoisier*<sup>1</sup>, *Chiara Storari*<sup>1</sup>, *Saphir Lesage*<sup>1</sup>, *Lucie Vitto*<sup>1z</sup>, ***Chiara Fedeli***<sup>2</sup>, *Isabelle Peytremann-Bridevaux*<sup>1</sup>, *Ingrid Gilles*<sup>1</sup>, *Alexandra Calmy*<sup>2</sup>

1\_Center for Primary Care and Public Health (Unisanté), Department of Epidemiology and Health Systems, University of Lausanne, Lausanne, Switzerland- 2\_HIV/AIDS Unit, Department of Infectious Diseases, Geneva University - Hospitals, Geneva, Switzerland

**Introduction:** Les femmes sont sous-représentées dans les essais cliniques sur le VIH. Pourtant, leur participation reste cruciale puisque l'efficacité et la sécurité des traitements peuvent varier en fonction de facteurs spécifiques au sexe. L'objectif de cette étude est d'explorer les perceptions des femmes vivant avec le VIH sur la recherche, afin de déterminer les principaux moteurs de leur participation ou non aux essais cliniques.

**Méthode:** Nous avons mené des entretiens semi-structurés auprès de 20 femmes vivant avec le VIH sous traitement antirétroviral, suivies aux Hôpitaux Universitaires de Genève (Unité VIH). Les participantes étaient interrogées sur leur attitude à l'égard de leur participation à un essai clinique vaccinal fictif et sur les avantages et inconvénients de leur participation aux essais cliniques en général. Une analyse lexicographique des entretiens transcrits a été réalisée afin d'identifier des thèmes récurrents.

**Résultats:** Les participantes ont évoqué trois grandes thématiques : les éléments du choix de participation, le «bien vivre avec» le VIH et les effets indésirables des traitements. Elles ont souligné l'importance de la recherche comme élément moteur positif mais en valorisant une information détaillée, présentée par des professionnels de confiance, comme élément central de la décision de participation. Les responsabilités familiales et l'impact potentiel d'effets secondaires ont été identifiées comme des obstacles, mais pas la possibilité d'une grossesse.

**Conclusion:** Les professionnels de santé devraient améliorer les connaissances des femmes en matière de recherche en adaptant les essais cliniques à leurs rôles sociaux et à leurs problèmes de santé. La confiance envers les soignants est un élément facilitateur primordial.

**P7****UNE APPROCHE SÉMANTIQUE UNIFIÉE POUR LA RÉUTILISATION DES DONNÉES CLINIQUES***Christophe Gaudet-Blavignac, Julien Ehram, Nikola Bjelogrić, Cyrille Duret, Christian Lovis*

Service des Sciences de l'Information Médicale

**Introduction:** Une quantité exponentielle de données est produite et stockée tous les jours aux HUG. Ces dernières années ont vu une amélioration importante de leur disponibilité, avec la mise en place du data-lake institutionnel. Pourtant, si la disponibilité n'est plus une barrière aujourd'hui, l'effort nécessaire pour les réutiliser reste bien souvent rédhibitoire.

**Méthode:** Afin de rendre les données réutilisables, il est nécessaire de 1. En faire l'inventaire. 2. Choisir une manière de représenter leur sens de manière formelle dans une ontologie pivot. 3. Créer cette représentation sémantique et la lier aux données. 4. Stocker cette représentation dans un outil permettant de l'exploiter.

L'ampleur de la tâche étant gigantesque une priorisation est indispensable. Les données structurées sont choisies comme première étape et, parmi elles, les éléments les plus fréquents sont traités en premiers. L'encodage est effectué à la main, par des experts.

**Résultats:** L'ontologie choisie est SNOMED CT, pour sa couverture large, sa compositionnalité et sa recommandation par la confédération.

A ce jour, plus de 62'000 éléments structurés ont été encodés, couvrant plus de 29'000 concepts différents. Ces éléments structurés proviennent de différentes sources métiers telles que les problèmes patients, les diagnostics infirmiers ou les formulaires.

Une base de données en graphe est mise en place pour contenir ces encodages et permettre une exploration des données. A l'exception des formulaires, les éléments encodés couvrent plus de 90% des instances de leur catégorie.

**Conclusion:** Avec une approche pragmatique basée sur la représentation des données dans une ontologie pivot, plus de 62'000 éléments structurés du data-lake institutionnel ont été encodés dans une représentation sémantique. Cette représentation a permis de mettre en évidence que le nombre de concepts distincts est en réalité 2 fois inférieur au nombre d'éléments distincts vu de l'informatique. Cette démarche est le premier pas vers une meilleure réutilisation des données cliniques.

**P8****DEVELOPMENT AND VALIDATION OF A PREDICTIVE MODEL FOR INTERNAL HERNIA AFTER ROUX-EN-Y GASTRIC BYPASS IN A MULTICENTRIC RETROSPECTIVE COHORT THE SWIRL, WEIGHT EXCESS LOSS, LIQUID SCORE**

*Guillaume Giudicelli, MD, Pierre-Alexandre Poletti, MD,y Alexandra Platon, MD,z Jacques Marescaux, MD, FACS, (Hon), FRCS (Hon), FJSES,z Michel Vix, MD,§ Michele Diana, MD, PhD,z§ Alfonso Lapergola, MD,z Marc Worreth, MD, Alend Saadi, MD, Aure'lie Bugmann, Philippe Morel, MD, Christian Toso, MD, PhD, Stefan Mo'nig, MD, Monika E. Hagen, MD, and Minoa K. Jung,*

From the Unit of Visceral Surgery, Department of Surgery, Geneva University- Hospital, Geneva,- Switzerland; yDepartment of Radiology, Geneva University- Hospital, Geneva, Switzerland; zIHU-Strasbourg, Institute of Image-guided- Surgery, Strasbourg, France; §Department of Surgery, Strasbourg University - Hospital, Strasbourg, France; and Department of Surgery, Neuchâtel Hospital, Neuchâtel, Switzerland.

**Introduction:** The clinical diagnosis of IH is challenging. A sensitivity of 63% to 92% was reported for computed tomography (CT). The aim of this study was to develop and validate a prediction score for internal hernia (IH) after Roux-en-Y gastric bypass (RYGB).

**Méthode:** Consecutive patients admitted for abdominal pain after RYGB and undergoing CT and surgical exploration were included retrospectively. Potential clinical predictors and radiological signs of IH were entered in binary logistic regression analysis to determine a predictive score of surgically confirmed IH in the Geneva training set (January 2006–December 2014), and validated in 3 centers, Geneva (January 2015–December 2017) and Neuchâtel and Strasbourg (January 2012– December 2017).

**Résultats:** Two hundred twenty-eight patients were included, 80 of whom (35.5%) had surgically confirmed IH, 38 (16.6%) had a negative laparoscopy, and 110 (48.2%) had an alternate diagnosis. In the training set of 61 patients, excess body weight loss >95% (odds ratio [OR] 6.73, 95% confidence interval [CI]: 1.13–39.96), swirl sign (OR 8.93, 95% CI: 2.30–34.70), and free liquid (OR 4.53, 95% CI: 1.08–19.0) were independent predictors of IH. A score > 2 was associated with an IH incidence of 60.7% (34/56), and 5.3% (3/56) had a negative laparoscopy.

**Conclusion:** The score could be incorporated in the clinical setting. To reduce the risk of delayed IH diagnosis, emergency explorative laparoscopy in patients with a score > 2 should be considered.



**P9****GROUP A STREPTOCOCCAL PHARYNGITIS: SIX DAYS AMOXICILLIN OR SIX DAYS PLACEBO IN CHILDREN BETWEEN 3 AND 15 YEARS OF AGE: A RANDOMIZED, DOUBLE-BLIND, MULTICENTRE, NON-INFERIORITY TRIAL. THE GASPARD STUDY**

*Renato Gualtieri<sup>1</sup>, Charlotte Verolet<sup>1</sup>, Laure Pittet<sup>1</sup>, Sébastien Papis<sup>1</sup>, Chiara Mardegan<sup>1</sup>, Marie Rohr<sup>1</sup>, Juan Llor<sup>2</sup>, Sandra Asner<sup>3</sup>, Ulrich Heininger<sup>4</sup>, Laurence Lacroix Ducardonnoy<sup>5</sup>, Klara Posfay-Barbe<sup>1</sup>*

1 General Paediatrics and Paediatric Infectious Diseases Unit, Department of Woman, Child and Adolescent, Geneva Children's Hospital, Geneva University Hospitals, Geneva, Switzerland- 2 Department of Pediatrics, Sion Hospital, Centre Hospitalier du Valais Romand, Switzerland- 3 Pediatric Infectious Diseases and Vaccinology Unit, Department Mother-Woman-Child, Lausanne University Hospital, Lausanne, Switzerland. 4 Paediatric Infectious Diseases, University of Basel Children's Hospital, Spitalstrasse 33, 4056, Basel, Switzerland.- 5 Paediatric Emergency Medicine Unit, Department of Woman, Child and Adolescent, Geneva Children's Hospital, Geneva University Hospitals, Geneva, Switzerland.

**Introduction:** Group A Streptococcus (GAS) is a common bacterial cause for acute pharyngitis. Antibiotics have traditionally been used to reduce the risk of complications, but recent studies have shown that benefits of antibiotics may be limited, particularly in developed countries where the incidence of complications has declined significantly. Reducing the duration of symptoms may be the only reasonable benefit. Our study aims to evaluate if placebo is non-inferior to amoxicillin in reducing the duration of fever.

**Méthode:** We randomized 88 children between 3 and 15 years of age presenting with acute symptoms of pharyngitis and a positive rapid antigen detection test for GAS in three Swiss hospitals to receive a 6-day treatment of either placebo (n=46) or amoxicillin (n=42). Primary outcome was fever duration, with a non-inferiority threshold set at 12 hours.

**Résultats:** In per-protocol analysis, mean difference in fever duration between groups was 2.0 hours (95% CI -8.3 to 12.3), with similar result in the intention-to-treat analysis (2.8 hours, 95% CI -6.5 to 12.2). Complications were observed in 6 patients (5.7%) in placebo group and 2 patients (2.3%) in amoxicillin group (relative risk 2.15; 95%CI 0.44 to 10.57): all were identified early and recovered well. Pain intensity was similar between groups over the 7 days following inclusion, with a largest difference of 0.5 (95% CI -0.62 to 1.80) at day 3

**Conclusion:** Placebo is non-inferior to amoxicillin in reducing the duration of fever. Pain intensity and risk of complications were similar in the two groups. These findings support restrictive antibiotic treatment of streptococcal pharyngitis.

**P10****L'EFFET D'UNE INTERVENTION BASEE SUR LA PLEINE CONSCIENCE SUR LE FONCTIONNEMENT NEUROCOGNITIF DES JEUNES ADOLESCENTS NES PREMATUREMENT ET SON ASSOCIATION AVEC DES CHANGEMENTS MICROSTRUCTURAUX DE LA MATIERE BLANCHE**

*Vanessa Siffredi<sup>1,2,3</sup>- Maria Chiara Liverani<sup>1,4</sup>- Dimitri Van De Ville<sup>1,2,3</sup>- Lorena G. A. Freitas<sup>1,2,3</sup>- Cristina Borradori Tolsa<sup>1</sup>, - Petra Susan Hüppi<sup>1</sup>- Russia Ha-Vinh Leuchter<sup>1</sup>*

1-Division of Development and Growth, Department of Paediatrics, Gynaecology and Obstetrics, Geneva University Hospitals and University of Geneva, Geneva, Switzerland.- 2-Neuro-X Institute, École Polytechnique Fédérale de Lausanne, Geneva, Switzerland.- 3-Department of Radiology and Medical Informatics, Faculty of Medicine, University of Geneva, Geneva, Switzerland.- 4-SensoriMotor, Affective and Social Development Laboratory, Faculty of Psychology and Educational Sciences, University of Geneva, Geneva, Switzerland. 5Child Development Lab & Medical Image Processing Lab-Campus Biotech, Chemin Des Mines 9, 1202 Geneva, Switzerland

**Introduction:** Les jeunes adolescents très prématurés présentent un risque élevé de difficultés exécutives, comportementales et socio-émotionnelles. Des recherches antérieures ont montré des bénéfices de l'intervention basée sur la pleine conscience (MBI) sur ces capacités. Cette étude vise à évaluer l'association entre les effets de l'intervention basée sur la pleine conscience sur les capacités exécutives, comportementales et socio-émotionnelles et les changements dans la microstructure de la matière blanche chez les jeunes adolescents nés prématurément qui ont suivi un programme d'intervention basée sur la pleine conscience de 8 semaines.

**Méthode:** Une évaluation neurocomportementale complète et une IRM de diffusion ont été réalisées avant et après une intervention basée sur la pleine conscience chez 32 jeunes adolescents nés prématurément. Des mesures de l'imagerie par tenseur de diffusion (DTI) et de dispersion et de densité de l'orientation des neurites (NODDI) ont été extraites sur des faisceaux bien définis de la substance blanche. Une approche multivariée basée sur les données a été utilisée pour explorer les associations entre les données neurocomportementales et les modifications de la matière blanche après la pleine conscience.

**Résultats:** Les résultats ont montré une amélioration du fonctionnement exécutif global, rapportée par les parents, après la pleine conscience, associée à une augmentation de l'anisotropie fractionnelle (FA) et d'une diminution de la dispersion axonale (ODI) dans les voies de la substance blanche impliquées dans les processus exécutifs. Les jeunes adolescents nés prématurément dont l'âge gestationnel à la naissance était le plus bas présentaient les modifications les plus importantes de la microstructure de la substance blanche.

**Conclusion:** Cette étude démontre que l'amélioration du fonctionnement exécutif après une intervention basée sur la pleine conscience chez les jeunes adolescents nés prématurément est associée à des changements microstructuraux de la matière blanche dans les voies impliquées dans les processus exécutifs. Notre étude suggère également que les jeunes adolescents les plus vulnérables, présentent le gain le plus important. Enfin, la pleine conscience semble être un outil prometteur pour améliorer les fonctions exécutives et la plasticité cérébrale de la matière blanche dans une population vulnérable telle que les jeunes adolescents nés prématurément.

**P11****IDENTIFYING THE PALLIATIVE CARE NEEDS OF FRAIL, OLDER, HOUSEBOUND PATIENTS IN THE COMMUNITY: A CROSS-SECTIONAL STUDY**

*Lisa Hentsch, Cristiana Pereira, Nathalie Pinon, Aurélie Tahar, Sophie Pautex*

Service de médecine palliative, Service de médecine de premier recours

**Introduction:** The early introduction of palliative care can have a positive impact on the quality of life of patients suffering from life-limiting diseases. However, the palliative care needs of older, frail, housebound patients are still mostly unknown, as is the impact of frailty on the importance of these needs. The aim of this study was to identify the palliative care needs of frail, older, housebound patients in the community.

**Méthode:** We conducted a cross-sectional observational study. This study took place in a single primary care center and included patients who were  $\geq 65$  years old, housebound, followed by the Geriatric Community Unit of the Geneva University Hospitals.

**Résultats:** Seventy-one patients completed the study. Mean symptom score was higher in frail patients as opposed to vulnerable patients for tiredness ( $p = 0.016$ ), drowsiness ( $p = 0.0196$ ), loss of appetite ( $p = 0.0124$ ), and impaired feeling of well-being ( $p = 0.0132$ ). There was no difference in spiritual well-being, between frail and vulnerable participants, although scores in both groups were low. Caregivers were mainly spouses (45%) and daughters (27.5%) with a mean (SD) age of 70.7 ( $\pm 13.6$ ). The overall carer-burden measured by the Mini-Zarit was low.

**Conclusion:** Older, frail, housebound patients have specific needs that differ from non-frail patients and should guide future palliative care provision. How and when palliative care should be provided to this population remains to be determined.

**P12****OPIOID-RELATED ADVERSE DRUG REACTIONS IN PATIENTS VISITING THE EMERGENCY DIVISION OF A TERTIARY HOSPITAL**

*Kuntheavy Ing Lorenzini, Laura Wainstein, Hervé Spechbach, François Sarasin, Majd Ramlawi, Jules Desmeules, Valérie Piguet*

Pharmacologie et toxicologie cliniques

**Introduction:** Opioid use and associated morbidity and mortality have increased in several countries during the past 20 years.

**Méthode:** We performed a study whose objective was to assess the frequency and causes of opioid-related emergency division (ED) visits in an adult tertiary Swiss University Hospital over 9 weeks in 2018. We primarily assessed opioid-related adverse drug reactions (ADR), secondary overdose, misuse, abuse, and insufficient pain relief.

**Résultats:** Current opioid use was identified in 1037 (8.3%) of the 12 470 included ED visits. In 64 opioid users, an ADR was identified as a contributing cause of the ED visit, representing 6.2% of opioid users, and 0.5% of the total ED visits. Moreover, we identified an overdose in 16 opioid users, misuse or abuse in 19 opioid users, and compatible withdrawal symptoms in 7 opioid users. After pooling all these events, we conclude that the ED visits could be related to opioid use in 10.2% of opioid users.

**Conclusion:** In the context of an ever-increasing opioid use to better control chronic pain situations, these results should reinforce emergency network epidemiological surveillance studies at a national level.

**P13****HOW TO IMPROVE HOSPITAL ADMISSION SCREENING FOR PATIENTS AT RISK OF MULTIDRUG-RESISTANT ORGANISM CARRIAGE: A BEFORE-AND-AFTER INTERVENTIONAL STUDY AND COST-EFFECTIVENESS ANALYSIS**

*Dominique Joubert, Stephane Cullati, Pascal Briot, Lorenzo Righi, Damien Grauser, Aimad Ourahmoune, Pierre Chopard*

Pôle pratique professionnelle Direction des soins, HUG

**Introduction:** Infection prevention and control (IPC) is a prioritised task for healthcare workers in emergency department (ED). Here, we examined compliance with admission screening (AS) and additional precautions (AP) measures for patients at risk of infection with multidrug-resistant organisms (MDROs) by using a two-stage, multifaceted educational intervention, also comparing the cost of a developed automated indicator for AS and AP compliance and clinical audits to sustain observed findings.

**Méthode:** In the first stage, staff in the ED of the University Hospitals of Geneva, Switzerland, were briefed on IPC measures (AS and AP). A cross-sectional survey was then conducted to assess barriers to IPC measures. In the second stage, healthcare workers underwent training sessions, and an electronic patient record 'order-set' including AS and AP compliance indicators was designed. We compared the cost-benefit of the audits and the automated indicators for AS and AP compliance.

**Résultats:** Compliance significantly improved after training, from 36.2% (95% CI 23.6% to 48.8%) to 78.8% (95% CI 67.1% to 90.3%) for AS (n=100, p=0.0050) and from 50.2% (95% CI 45.3% to 55.1%) to 68.5% (95% CI 60.1% to 76.9%) for AP (n=125, p=0.0092). Healthcare workers recognised MDRO screening as an ED task (70.2%) with greater acknowledgment of risk factors at AS considered an ED duty. With a reported yearly cost of US\$120 203 cost of developing the automated indicator was US\$18 290 and its return on investment US\$3.44 per US\$1 invested.

**Conclusion:** Training ED staff increased compliance with IPC measures when accompanied by team discussions for optimal effectiveness. An automated indicator of compliance is cheaper and closer to real-time than a clinical audit.

**P14****EVALUATION DE PATIENTS SUSPECTS D'INFECTION A LA COVID19 AU SEIN D'UN CENTRE DE COMMUNICATION MEDICALE D'URGENCE AVEC L'AJOUT DE LA VIDEO EN DIRECT**

*Robert Larribau, Beth Healey, Victor Nathan Chappuis, Dominique Boussard, Florent Guiche, Tara Herren, Birgit Andrea Gartner, Laurent Suppan*

Service des Urgences, HUG

**Introduction:** La pandémie de COVID-19 a eu un impact majeur sur les centres de communication médicale d'urgence (CCMU) qui ont dû se réorganiser. Dans un CCMU à deux niveaux de réponse, dont le 1er est paramédicalisé, un outil de vidéo en direct a été mis à disposition des médecins constituant le 2ème niveau pour leur permettre d'affiner le tri des patients. Cette étude visait à décrire la contribution de la vidéo en direct dans l'évaluation de deuxième ligne des patients suspects de la COVID19 par les médecins des CCMUs.

**Méthode:** Etude rétrospective mono-centrique qui incluait toutes les évaluations téléphoniques des patients présentant des symptômes compatibles avec la COVID19 du 1er Avril 2020 au 30 Avril 2021. L'organisation du CCMU et les caractéristiques des patients qui ont appelé les deux lignes d'urgence pour une suspicion (ou une maladie avérée) à la COVID19 ont été décrits. Une enquête en ligne a été réalisée durant la même période auprès des médecins dans le but de mesurer les indications, limitations et l'impact de la vidéo en direct sur leurs décisions.

**Résultats:** 8'957 patients ont été inclus. 2'157(48,0%) des 4'493 patients évalués sur la ligne d'urgence présentaient une dyspnée tandis que 4'045(90,6%) des 4'464 patients évalués sur la ligne COVID-19 présentaient des symptômes grippaux. 1'798(20,1%) patients ont été réévalués médicalement, dont 405(22,5%) avec la vidéo live. Les médecins utilisaient la vidéo pour évaluer principalement la respiration (81,3 %) et l'état général (78,5 %) des patients. Ils ont estimé que leur décision était modifiée dans 75,7%(n=81) des cas et ont rattrapé 7(7,7%) patients en urgence vitale (107 formulaires de l'enquête en ligne).

**Conclusion:** Durant les deux premières vagues de la pandémie, un patient sur cinq a été examiné par un médecin en 2ème ligne, qui a utilisé la vidéo en direct avec parcimonie, principalement pour évaluer la respiration et l'état général des patients. L'usage de la vidéo en direct a influencé la décision médicale dans >¾ des évaluations et cela a permis de rattraper 7,7% d'urgences vitales non détectées initialement.

**P15****EVALUATION OF THE IMPACT OF THE COVID-19 LOCKDOWN ON BMI IN CHILDREN AND ADOLESCENTS WITH OR WITHOUT OBESITY**

*Albane Maggio; Claudine Gal-Dudding; Xavier Martin; Catherine Chamay-Weber*

Service des spécialités pédiatriques, DFEA, H

**Introduction:** In Switzerland, from March 15th to May 11th 2020, schools and most shops were closed nationwide due to the COVID-19-related lockdown. This cessation of activities may have impacted weight gain in children and adolescents. The aims of our study were to evaluate the effects of the COVID-19 lockdown on the BMI of children and adolescents in treatment for obesity, and to compare its evolution to that of the previous year at the same time, as well as to that of normal-weight children.

**Méthode:** This retrospective study gathered demographic and anthropometric data from subjects aged 2 - 18 years both with normal weight and with obesity, who attended our hospital clinics at four time points: before and after the lockdown period in 2020, and at the same times of the year in 2019. We used paired t-tests to assess weight, BMI and BMI z-score changes, linear and standard multiple regressions, independent Student's t-tests or Chi-square tests to compare groups, and Pearson correlation coefficient when appropriate.

**Résultats:** Forty-seven children with obesity and 20 normal-weight subjects had complete data for the 4 visits. The mean BMI increased in both groups during the lockdown (obese:  $+0.96 \pm 1.5$  vs. control:  $+0.51 \pm 0.5$ ), however the increase was significantly more important in the subjects with obesity compared to the same period in 2019 (2019:  $+0.33 \pm 1.0$ ; mean difference between 2019 and 2020:  $+0.63 \pm 2.0$   $p=0.034$ ).

**Conclusion:** The COVID-19 lockdown had a negative impact on the BMI of youth with obesity. Interestingly we observed extreme changes in this population, which was not the case in normal-weight children. Therefore, families with a child with obesity must be actively supported during these stressful and obesogenic periods of confinement.

**P16****ACCEPTABILITE ET SECURITE DE LA THERMOABLATION POUR LA PREVENTION DU CANCER DU COL DE L'UTERUS EN AFRIQUE SUBSAHARIENNE**

*Tania Metaxas, Bruno Kenfack, Jessica Sormani, Eveline Tincho, Sophie Lemoupa Makajio, Ania Wisniak, Pierre Vassilakos et Patrick Petignat*

Service de Gynécologie, HUG

**Introduction:** L'Organisation Mondiale de la Santé propose la thermoablation pour traiter les lésions précancéreuses du col de l'utérus dans les pays en voie de développement. L'objectif de cette étude est d'évaluer l'acceptabilité et la sécurité de la thermoablation chez des femmes ayant des lésions précancéreuses cervicales en Afrique subsaharienne.

**Méthode:** Des femmes asymptomatiques âgées de 30-49 ans habitant dans le district de Dschang au Cameroun ont été invitées à participer à la campagne de dépistage du cancer du col de l'utérus selon l'approche 3T ("test, triage and treat") : les patientes recrutées ont effectué un auto-test HPV (Human Papilloma Virus), suivi d'une évaluation visuelle du col en cas de test HPV-positif, puis de traitement des lésions précancéreuses par thermoablation.

**Résultats:** 399 patientes HPV-positives (18.7% des femmes dépistées) ont été recrutées entre septembre 2018 et décembre 2020, parmi lesquelles 236 (59.1%) avaient un test visuel positif. 234 d'entre elles ont été traitées par thermoablation. Le traitement n'était pas considéré comme douloureux par 209 (90.9%) patientes. La plupart des femmes ont déclaré des effets secondaires légers à modérés. Les symptômes les plus fréquents étaient des pertes vaginales. Aucune des patientes n'a souffert d'effet secondaire grave.

**Conclusion:** La thermoablation est bien acceptée et est une procédure présentant peu de risque. Elle contribue au dépistage et traitement en une seule consultation et permet de lutter contre le cancer du col de l'utérus dans les pays en voie de développement.

**P17****THE EFFECTS OF TIME-RESTRICTED EATING AND WEIGHT LOSS ON BONE METABOLISM AND HEALTH: A 6-MONTH RANDOMIZED CONTROLLED TRIAL**

*Maria Papageorgiou 1, \*, Emmanuel Biver 1, Julie Mareschal 2, Nicholas Edward Phillips 2,3, Alexandra Hemmer 2, Emma Biolley 2, Nathalie Schwab 4,5, Emily N. C. Manoogian 6, Elena Gonzalez Rodriguez 7, Daniel Aeberli 8, Didier Hans 7, Caroline Pot 9, Satchidananda Panda 6, Nicolas Rodondi 4,5, Serge L. Ferrari 1, Tinh-Hai Collet 2,10*

1 Division of Bone Diseases, Geneva University Hospitals (HUG) and Faculty of Medicine, University of Geneva, Geneva, Switzerland- 2 Nutrition Unit, Service of Endocrinology, Diabetes, Nutrition and Therapeutic Education, Department of Medicine, Geneva University Hospitals (HUG), 1211 Geneva, Switzerland- 3 Institute of Bioengineering, School of Life Sciences, Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland- 4 Department of General Internal Medicine, Bern University Hospital, Inselspital, University of Bern, 3010 Bern, Switzerland- 5 Institute of Primary Health Care (BIHAM), University of Bern, 3012 Bern, Switzerland- 6 Salk Institute for Biological Sciences, La Jolla, CA 92037, USA- 7 Interdisciplinary Center for Bone Diseases, Service of Rheumatology, Lausanne University Hospital (CHUV) and University of Lausanne, 1011 Lausanne, Switzerland- 8 Department of Rheumatology and Immunology, Bern University Hospital, Inselspital and University of Bern, 3010 Bern, Switzerland- 9 Division of Neurology, Department of Clinical Neurosciences, Lausanne University Hospital (CHUV) and University of Lausanne, Lausanne, Switzerland- 10 Diabetes Centre, Faculty of Medicine, University of Geneva, Geneva, Switzerland

**Introduction:** It remains uncertain whether time-restricting eating (TRE) induces bone loss similar to that seen in response to conventional weight loss approaches (e.g., moderate to severe caloric restrictions). We aimed to explore the effects of 6-month TRE vs. standard dietary advice (SDA) on bone metabolism and health.

**Méthode:** Adults with  $\geq 1$  component of metabolic syndrome [ $n=42$ , 76% women, median age 47 years (IQR 31-52)] were randomized to TRE (ad libitum eating within 12h) or SDA (food pyramid brochure). Bone turnover markers and bone mineral content/density (BMC/BMD) by DXA were assessed at baseline and 6-month follow-up. Statistical analyses were performed in the total population and by weight loss response.

**Résultats:** In the total population, there were no between-group differences (TRE vs. SDA) in any bone parameter. Among responders ( $\geq 0.6$  kg weight loss), the bone resorption marker CTX ( $\beta$ -carboxyterminal telopeptide of type I collagen) tended to decrease after TRE but increase after SDA (between-group differences  $p=0.041$ ). Changes in the bone formation marker P1NP (procollagen type I N-propeptide) did not differ between groups. Total body BMC decreased after SDA ( $p=0.028$ ) but remained unchanged after TRE ( $p=0.31$ ) (between-group differences  $p=0.028$ ). Among non-responders ( $< 0.6$ kg weight loss), there were no between-group differences in bone outcomes.

**Conclusion:** TRE had no detrimental impact on bone health, whilst when weight loss occurred, it was associated with some bone-sparing effects compared to SDA.

**P18****IMPORTANTE CHARGE DE MORBIDITE LIEE AUX CANCERS INVASIFS ET NON INVASIFS CHEZ LES FEMMES AGEES DE 20 A 49 ANS A GENEVE, SUISSE**

*Elisabetta Rapiti, Evelyne Fournier, Robin Schaffar*

Registre des tumeurs de Genève, Institut de Santé Globale, Université de Genève

**Introduction:** Le profil du cancer chez les jeunes adultes âgés de 20 à 49 ans est différent de celui observé dans les autres groupes d'âge. Les femmes présentent notamment des taux plus élevés que ceux observés chez les hommes. Les estimations de la charge de la maladie cancéreuse chez les femmes de ce groupe d'âge incluent rarement les maladies invasives et non invasives.

**Méthode:** Nous avons calculé les taux d'incidence des cancers invasifs et non invasifs chez les femmes et les hommes âgés de 20 à 49 ans par localisation du cancer pour la période 2014-2018 dans le canton de Genève utilisant les données du registre des tumeurs basé sur la population.

**Résultats:** Entre 2014 et 2018, les taux d'incidence des cancers invasifs et non invasifs chez les femmes de 20 à 49 ans étaient de 177,6/100 000 et 166,4/100 000, respectivement. Les taux chez les hommes du même âge étaient respectivement de 110,6/100 000 et de 31,8/100 000. Trois cancers seulement, le cancer du sein, le cancer de la thyroïde et le mélanome, représentaient 70 % de tous les cancers invasifs chez les femmes. Le cancer in situ du col de l'utérus représentait plus de 70 % des maladies non invasives.

**Conclusion:** Le cancer chez les femmes âgées de 20 à 49 ans est assez fréquent à Genève. Cela est principalement dû à l'augmentation du risque, à l'augmentation du diagnostic ou aux deux. Cela souligne la nécessité de meilleures stratégies de prévention primaire, d'une évaluation personnalisée des risques et d'un dépistage adapté, ainsi que d'une sensibilisation accrue des femmes et des professionnels de la santé aux risques pour la santé chez les jeunes adultes.

## P19

## RECOMMENDATIONS FOR BRAIN HEALTH SERVICES

*Giovanni B. Frisoni, a, Daniele Altomare, a Federica Ribaldi, a Nicolas Villain, b, c Carol Brayne, d Naaheed Mukadam, e Marc Abramowicz, f - Frederik Barkhof, g, h Marcelo Berthier, i Melanie Bieler-Aeschlimann, j, k Kaj Blennow, l Andrea Brioscchi Guevara, j, m Emmanuel Carrera, n Gaël Chételat, o Chantal Csajka, p Jean-François Demonet, j, q Alessandra Dodich, r Valentina Garibotto, s Jean Georges, t Samia Hurst, u Frank Jessen, v, w, x - Miia Kivipelto, y, z, aa, ab David J. Llewellyn, ac, ad Laura McWhirter, ae Richard Milne, d, af Carolina Minguillón, ag, ah, ai Carlo Miniussi, r, aj - José Luis Molinuevo, ag, ak Peter M. Nilsson, al, am Alastair Noyce, an Janice M. Ranson, ac Oriol Grau-Rivera, ag Jonathan M. Schott, ao Alina Solomon, ap, aq, ab - Ruth Stephen, ap Wiesje van der Flier, ar, as, at Cornelia van Duijn, au, av Bruno Vellas, aw Leonie N. C. Visser, y, ax Jeffrey L. Cummings, ay Philip Scheltens, ar, az - Craig Ritchie, ba and Bruno Dubois, b, c*

a. Memory Center, Department of Rehabilitation and Geriatrics, University Hospitals and University of Geneva Geneva, Switzerland- b. Institut de la Mémoire et de la Maladie d'Alzheimer, IM2A, Groupe Hospitalier Pitié-Salpêtrière, Sorbonne Université, Paris, France- c. Institut du Cerveau et de la Moelle Épineuse, UMR-S975, INSERM, Paris, France- d. Cambridge Public Health, University of Cambridge, Cambridge, UK- e. Division of Psychiatry, University College London, London, UK f. Genetic Medicine, Diagnostics Dept, University Hospitals and University of Geneva, Geneva, Switzerland- g. Radiology & Nuclear Medicine, Amsterdam University Medical Centers, Amsterdam, the Netherlands- h. Queen Square Institute of Neurology, University College London, London, UK i. Unit of Cognitive Neurology and Aphasia, Centro de Investigaciones Médico-Sanitarias (CIMES), University of Malaga, Malaga, Spain- j. Leenaards Memory Centre, Department of Clinical Neurosciences, University Hospital of Lausanne (CHUV), Lausanne, Switzerland - k. Infections Disease Service, University Hospital of Lausanne (CHUV), Lausanne, Switzerland- l. Clinical Neurochemistry Laboratory, Institute of Neuroscience and Physiology, University of Gothenburg, Sahlgrenska University Hospital, Mölndal, Sweden - m. Faculty of Psychology and Educational Sciences, University of Geneva, Geneva, Switzerland - n. Stroke Center, Department of Clinical Neurosciences, University Hospitals and University of Geneva, Geneva, Switzerland o. Normandie University, UNICAEN, INSERM, U1237, PhD Physiopathology and Imaging of Neurological Disorders, Cycleron, Caen, France - p. Center of Research and Innovation in Clinical Pharmaceutical Sciences, University Hospital and University of Lausanne, Lausanne, Switzerland q. French Clinical Research Infrastructure Network, INSERM, University Hospital of Toulouse, France r. Center for Mind/Brain Sciences (CIMeC), University of Trento, Rovereto, Italy - s. Division of Nuclear Medicine and Molecular Imaging, University Hospitals of Geneva and NIMTLab, University of Geneva, Geneva, Switzerland- t. Alzheimer Europe, Luxembourg - u. Institute for Ethics, History, and the Humanities, Faculty of Medicine, University of Geneva, Geneva, Switzerland - v. Department of Psychiatry, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany - w. German Center for Neurodegenerative Diseases (DZNE), Bonn-Cologne, Germany x. Excellence Cluster Cellular Stress Responses in Aging-Related Diseases (CECAD), Medical Faculty, University of Cologne, Germany- y. Division of Clinical Geriatrics, Center for Alzheimer Research, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden - z. Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio, Finland - aa. Theme Aging, Karolinska University Hospital, Stockholm, Sweden ab. The Ageing Epidemiology Research Unit, School of Public Health, Imperial College London, London, UK - ac. College of Medicine and Health, University of Exeter, UK ad. Alan Turing Institute, Exeter, UK - ae. Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh, Scotland, UK af. Engagement and Society, Wellcome Connecting Science, Hinxton, UK - ag. Barcelonaβeta Brain Research Center (BBRC), Pasqual Maragall Foundation, Barcelona, Spain - ah. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Spain ai. CIBER Fragilidad y Envejecimiento Saludable (CIBERFES), Madrid, Spain - aj. Centre for Medical Sciences (CISMed), University of Trento, Rovereto, Italy - ak. H. Lundbeck A/S, Denmark - al. Department of Clinical Science, Lund University, Sweden - am. Department of Internal Medicine, Skåne University Hospital, Malmö, Sweden an. Preventive Neurology Unit, Wolfson Institute of Population Health, Queen Mary University of London, London, UK - ao. Dementia Research Centre, UCL Queen Square Institute of Neurology, London, UK - ap. Institute of Clinical Medicine, University of Eastern Finland, Kuopio, Finland aq. Division of Clinical Geriatrics, NVS, Karolinska Institutet, Stockholm, Sweden ar. Alzheimer Center Amsterdam, Department of Neurology, Amsterdam Neuroscience, Amsterdam UMC, Amsterdam, the Netherlands - as. Amsterdam Neuroscience, Neurodegeneration, Amsterdam, the Netherlands - at. Epidemiology and Data Science, Vrije Universiteit Amsterdam, Amsterdam UMC location VUmc, Amsterdam, the Netherlands - au. Department of Epidemiology, Erasmus University Medical Center, Rotterdam, the Netherlands - av. Clinical Trial Service Unit and Epidemiological Studies Unit, Nuffield Department of Population Health, University of Oxford, Oxford, UK aw. Gerontopole and Alzheimer's Disease Research and Clinical Center, Toulouse University Hospital, Toulouse, France - ax. Department of Medical Psychology, Amsterdam Public Health Research Institute, Amsterdam UMC, Amsterdam, the Netherlands - ay. Chambers-Grundy Center for Transformative Neuroscience, Department of Brain Health, School of Integrated Health Sciences, University of Nevada, Las Vegas, NV, USA - az. EQT Life Sciences, Amsterdam, the Netherlands - ba. Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh, UK

**Introduction :** Dementia has devastating impact on the quality of life of patients and families and huge cost to society. Delaying the onset of dementia by treating underlying diseases will bring huge individual and societal benefit. In higher-income countries, dementia incidence is decreasing due to healthier lifestyles. This observation supports the notion that preventing dementia is possible and already in action. Further reduction of dementia incidence through deliberate prevention plans is needed to counteract its growing prevalence. Increasing evidence supports the efficacy of preventive interventions on cognitively-unimpaired persons and high-risk of dementia.

**Méthode:** We report recommendations for the deployment of second-generation memory clinics (Brain Health Services) whose mission is evidence-based and ethical dementia prevention in at-risk individuals.

**Résultats:** The cornerstone interventions consist of (i) assessment of genetic and potentially modifiable risk factors including brain pathology, and risk stratification, (ii) risk communication with ad-hoc protocols, (iii) risk reduction with multi-domain interventions, and (iv) cognitive enhancement with cognitive and physical training.

**Conclusion:** A roadmap is proposed for concept validation and ensuing clinical deployment.

**P20****THERAPEUTIC DRUG MONITORING OF ORALLY ADMINISTERED LETERMIVIR PROPHYLAXIS IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS**

*Léna Royston, Stavroula Masouridi-Levrat, Verena Gotta, Eva Royston, Caroline Pressacco-Brossier, Yasmine Abi Aad, David Tonoli, Abderrahim Karmime, Murielle Jayo, Christian Van Delden, Pierre Lescuyer, Marc Pfister, Yves Chalandon, Dionysios Neofytos*

Service des maladies infectieuses HUG - Service d'hématologie HUG - Service de médecine de laboratoire et toxicologie HUG - Service de pharmacologie pédiatrique (Hôpital universitaire de Bâle)

**Introduction:** With balanced safety-efficacy profile, letermovir anti-cytomegalovirus (CMV) prophylaxis is used in hematopoietic stem cell transplant recipients (HSCTR). We assessed feasibility and usefulness of letermovir therapeutic drug monitoring (TDM) in HSCTR.

**Méthode:** We performed a prospective observational study on letermovir-TDM including 40 consecutive adult CMV-seropositive allogeneic-HSCTR who received orally (PO) administered letermovir. Minimal blood concentrations of letermovir (C<sub>trough</sub>) were measured on days 3 and 7 postletermovir initiation and weekly thereafter.

**Résultats:** Letermovir-C<sub>trough</sub> remained stable during the first 70 days post-HSCT at a median of 286 µg/L, with large interpatient/inpatient variability. No associations between breakthrough clinically significant CMV infection or detectable CMV DNAemia and letermovir-C<sub>trough</sub> were observed. Patients with letermovir-associated adverse events had higher letermovir-C<sub>trough</sub> than patients without (P = 0.02). Letermovir-C<sub>trough</sub> was similar in patients with or without gastrointestinal symptoms (P = 0.49). Acute grade ≥2 GvHD was associated with higher letermovir-C<sub>trough</sub> (P = 0.001), including gastrointestinal GvHD (P = 0.004). Concomitantly administered posaconazole and cyclosporine were associated with higher letermovir-C<sub>trough</sub> (P < 0.001 and P = 0.01, respectively).

**Conclusion:** In conclusion, administration of PO letermovir led to measurable and relatively stable letermovir-C<sub>trough</sub>, without noticeable associations with clinical efficacy. Letermovir exposure was not affected by gastrointestinal symptoms, but with posaconazole and cyclosporine administration. Associations between letermovir and concomitantly administered agents and adverse events warrant additional clinical studies.

**P21****COMPARAISON ENTRE LES COURS BASES SUR LA REALITE AUGMENTEE ET LES COURS EX-CATHEDRA : POUVONS-NOUS AMELIORER L'ENSEIGNEMENT DE LA NEUROANATOMIE GRACE A L'UTILISATION DE NOUVELLES TECHNOLOGIES ?**

*Abiram Sandralegar (1), Florian Bernard (2), Karl Schaller (1,3), Philippe Bijlenga (1,3), Julien Haemmerli (3)*

1) Faculté de Médecine, Université de Genève, Genève, Suisse - 2) Département de Neurochirurgie, CHU Angers, Angers, France - 3) Division de Neurochirurgie, Département des Neurosciences cliniques, Hôpitaux Universitaires de Genève, Genève, Suisse

**Introduction:** La compréhension de la neuroanatomie est primordiale pour quiconque souhaite comprendre les procédures intracrâniennes. Traditionnellement enseignée aux étudiants en médecine lors de cours ex-cathedra, la neuroanatomie est considérée comme complexe. Le développement de la réalité augmentée (AR) a ouvert de nouvelles perspectives dans le processus d'apprentissage. Cette étude vise à comparer la formation basée sur la AR avec les cours traditionnels ex-cathedra pour l'enseignement de la neuroanatomie.

**Méthode:** Deux cours sur l'anatomie des "artères-cérébrales"(VS) et des "fibres-de-la-substance-blanche"(WB) ont été conçus sous une forme ex-cathédra et une forme basée sur la AR(MagicLeap®,Elements Brainlab®). 65 étudiants en médecine ont été répartis au hasard dans deux groupes: le groupe 1 a assisté au cours ex-cathédra sur la WB et au cours AR sur la VS; le groupe 2 a assisté aux mêmes cours dans des formats inversés. Avant chaque cours, les étudiants ont passé un pré-test comprenant 10QCM. Après les cours, les étudiants ont passé un post-test de 20QCM.

**Résultats:** L'analyse intergroupe n'a montré aucune différence significative entre les groupes en ce qui concerne les résultats du pré-test. Concernant le cours VS, le score du post-test a montré une augmentation de 17,7% avec l'utilisation de la AR comparé à la forme ex-cathedra (respectivement, moyenne 13,2(sd=2,4) ; moyenne 11,2(sd=2,8) (p=0,003)). Aucune différence significative n'a été observée pour le cours sur WB (AR moyenne 17,4(sd=1,8) ; ex-cathedra moyenne 17,2(sd=1,4)(p=0,3)). 98,5% des étudiants ont montré une forte motivation pour apprendre la neuroanatomie avec la AR contre 33,8% pour les cours ex-cathedra (p<0,001).

**Conclusion:** Cette étude a montré une performance accrue concernant l'apprentissage de l'anatomie des artères de la circulation antérieure avec l'utilisation de la AR. La AR n'a apporté aucun avantage dans le processus d'apprentissage de l'anatomie des voies des fibres blanches. Un nouveau développement des lunettes de AR est nécessaire pour améliorer l'enseignement de la neuroanatomie. Il s'agit d'une étude en cours.

**P22****ASYMMETRIC SLEEP IN PATIENTS WITH FOCAL EPILEPSY**

*Laurent Sheybani, Pierre Mégevand, Nicolas Roehri, Laurent Spinelli, Andreas Kleinschmidt, Pieter van Mierlo, Margitta Seeck, Serge Vulliémot*

Neurologie (HUG), Ghent University (PvM)

**Introduction:** Sleep engages delimited brain regions and sleep biomarkers have been shown to be modulated by cognitive and motor paradigms. Whether pathological activity can also impact the focal expression of sleep markers remains vastly unknown. Here, we investigated whether epilepsy can be associated with a perturbed expression of sleep-related activities.

**Méthode:** We retrospectively included sixty-nine patients (29 females) with a lateralized epileptic focus (34 left-sided). We compared, between patients with left vs right focal epilepsy, the inter-hemispheric asymmetry of sleep slow oscillations power (0.5-4 Hz); spindles density (occurrence per min), amplitude, duration and locking to slow oscillations (estimated through the intertrial coherence); and sleep slow waves density, amplitude, duration and slope. We used a Fine Tree classifier to test if these population-based asymmetries reflect individual differences.

**Résultats:** We found significantly different asymmetries in slow oscillation power ( $p < 0.01$ ); slow wave amplitude ( $p < 0.05$ ) and slope ( $p < 0.01$ ); and spindle density ( $p < 0.0001$ ) and amplitude ( $p < 0.05$ ). Crucially, these asymmetries classified patients with an above-chance level of 65% (SD=5%). As expected, the asymmetry of interictal epileptiform discharges (IEDs) was even better in classifying patients ( $75 \pm 3\%$ ). Furthermore, it was slightly but significantly improved when the asymmetry of sleep markers was added to the Tree classifier ( $77 \pm 4\%$ ).

**Conclusion:** Our work establishes that several markers of sleep are asymmetrically expressed in patients with focal epilepsy, including at an individual level. It also suggests that sleep markers carry additional information to IEDs, given the improved performance of the classifier when they are added to IEDs.

**P23****IMPACT DE DEUX SEQUENCES DE REANIMATION SUR LA VENTILATION ALVEOLAIRE PENDANT LA PREMIERE MINUTE D'UN ARRET CARDIAQUE PEDIATRIQUE SIMULE : ESSAI CROISE RANDOMISE**

*Laurent Suppan, Laurent Jampen, Johan N. Siebert, Samuel Zünd, Loric Stuby, Florian Ozainne*

1. Division of Emergency Medicine, Department of Anesthesiology, Clinical Pharmacology, Intensive Care and Emergency Medicine, Faculty of Medicine, University of Geneva, Geneva University Hospitals, 1211 Geneva, Switzerland - 2. ESAMB-École Supérieure de Soins Ambulanciers, College of Higher Education in Ambulance Care, 1231 Conches, Switzerland - 3. Department of Paediatric Emergency Medicine, Geneva Children's Hospital, Geneva University Hospitals, 1211 Geneva, Switzerland - 4. Service de la Protection et de la Sécurité, Emergency Medical Services, 2000 Neuchâtel, Switzerland - 5. Genève TEAM Ambulances, Emergency Medical Services, 1201 Geneva, Switzerland

**Introduction:** L'International Liaison Committee on Resuscitation publie régulièrement un "Consensus on Science with Treatment Recommendations", mais les lignes directrices peuvent néanmoins différer lorsque des lacunes persistent dans les connaissances. En cas d'arrêt cardiaque pédiatrique, l'American Heart Association recommande de suivre la séquence de réanimation de l'adulte, c'est-à-dire de commencer par des compressions thoraciques. Inversement, l'European Resuscitation Council préconise d'effectuer cinq premières insufflations avant de commencer les compressions.

**Méthode:** Il s'agit d'un essai de supériorité, randomisé et croisé, conçu pour déterminer l'impact de ces deux séquences dans un modèle pédiatrique d'arrêt cardiaque. L'outcome primaire était la ventilation alvéolaire pendant la première minute des manœuvres de réanimation selon les directives utilisées.

**Résultats:** L'approche ERC a permis d'obtenir des volumes de ventilation alvéolaire plus élevés (370 ml [203-472] versus 276 ml [140-360],  $p < 0,001$ ) au détriment de fractions de compression thoracique plus faibles (57% [54;64] contre 66% [59;68],  $p < 0,001$ ). Les ventilations dans la cible de volume sont respectivement de 76% [65;82] versus 75% [52;100].

**Conclusion:** Bien que statistiquement significatives, les différences constatées peuvent ne pas être cliniquement pertinentes. De plus, les 5 ventilations initiales ne permettent pas d'augmenter la proportion de ventilations dans la cible. Par conséquent, et compte tenu de l'importance de surmonter les obstacles à la réanimation, la préconisation d'un algorithme spécifique à la pédiatrie n'est peut-être pas une stratégie appropriée.



**P24****POPULATION PHARMACOKINETIC MODELS FOR DIRECT ORAL ANTICOAGULANTS: A SYSTEMATIC REVIEW AND CLINICAL APPRAISAL USING EXPOSURE SIMULATION**

*Jean Terrier*<sup>1,2,3,\*</sup>, *Frédéric Gaspar*<sup>4,5,6</sup>, *Monia Guidi*<sup>4,6,7</sup>, *Pierre Fontana*<sup>2,8</sup>, *Youssef Daali*<sup>2,3</sup>, *Chantal Csajka*<sup>4,5,6</sup> and *Jean- Luc Remy*<sup>1,2</sup>

1Division of General Internal Medicine, Geneva University Hospitals, Geneva, Switzerland; 2Geneva Platelet Group, Faculty of Medicine, University of Geneva, Geneva, Switzerland; 3Clinical Pharmacology and Toxicology Service, Anesthesiology Pharmacology and Intensive Care Department, Geneva University Hospitals, Geneva, Switzerland; 4Center for Research and Innovation in Clinical Pharmaceutical Sciences, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland; 5School of Pharmaceutical Sciences, University of Geneva, Geneva, Switzerland; 6Institute of Pharmaceutical Sciences of Western Switzerland, University of Geneva, University of Lausanne, Geneva, Switzerland; 7Service of Clinical Pharmacology, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland; 8Division of Angiology and Haemostasis, Geneva University Hospitals, Geneva, Switzerland

**Introduction:** Available data have shown an association between direct oral anticoagulant (DOAC) plasma concentration and clinical, particularly bleeding, events. Factors that may influence DOAC plasma concentration are therefore the focus of particular attention. Population pharmacokinetic (PopPK) analyses can help in identifying such factors while providing predictive models. The main aim of the present study was to identify all the PopPK models to date for the four most frequently used DOACs (dabigatran, apixaban, rivaroxaban, and edoxaban) and to use these models to simulate different DOAC plasma concentration–time profiles in relevant clinical scenarios.

**Méthode:** A systematic search was undertaken according to PRISMA guidelines. All models with available and explicit equations for clearance calculation together with clearance interindividual variability (IIV) explicitly and correctly given were selected. Monte Carlo simulations of 1,000 individuals with selected demographic/clinical characteristics were performed using the R software (version 4.0.6) based on the reported equations and the model specific IIV to compute drug apparent clearance (CL/F) and exposure (area under the curve (AUC)) using the following equation:  $AUC = D / (CL/F)$  where D is the administered standard dose, CL/F the apparent clearance directly estimated by the PopPK models.

**Résultats:** The results of our model-based simulations confirm the clinical relevance of the known major factors influencing DOAC exposure and support the current approved dose adaptation, at least for atrial fibrillation. They also highlight how the accumulation of covariates, not currently considered for dose adaptation due to their seemingly minor influence on DOAC exposure (drug-drug interaction, genotypes), lead to supratherapeutic blood concentrations and could thus enhance the risk of major bleeding (AUC increase of >2 folds).

**Conclusion:** The present results therefore question DOAC dose adaptation in the presence of these covariates, such as drug–drug interaction or genotypes, alongside the known existing covariates. As the overall effect of accumulation of several covariates could be difficult to apprehend for the clinicians, PopPK modeling could represent an interesting approach for informed precision dosing and to improve personalized prescription of DOACs.

**P25****ÉCHELLE D'ÉVALUATION DES RISQUES D'ESCARRES EN PÉDIATRIE : TRADUCTION EN LANGUE FRANÇAISE, COHÉRENCE INTERNE, VALIDITÉ CONVERGENTE, FAISABILITÉ ET UTILITÉ CLINIQUE DE L'ÉCHELLE BRADEN QD**

*Mélanie Verdon*, *Anne-Claire Rae*, *Corinne Palleron*, *Marie-José Roulin*

Direction des soins, HUG

**Introduction:** La population pédiatrique est particulièrement vulnérable aux escarres. Afin d'identifier les patients à risques, une évaluation structurée est recommandée. L'utilisation de l'échelle Braden QD permet d'intégrer les risques liés à l'immobilité et à la présence de dispositifs médicaux. Les objectifs de cette étude étaient de réaliser une traduction en langue française (suisse francophone), un test de l'échelle Braden QD, évaluer sa cohérence interne, sa validité convergente, sa faisabilité et son utilité clinique.

**Méthode:** Lors de cinq enquêtes de prévalence, l'échelle Braden QD a été utilisée auprès de tous les enfants hospitalisés. Des tests psychométriques ont été mesurés. Un questionnaire de faisabilité et d'utilité clinique a été distribué aux enquêtrices.

**Résultats:** L'échelle traduite a pu être testée auprès de 352 enfants. Les enquêtes ont montré que 5,1 % étaient à risques de développer une escarre et 85,8 % étaient porteurs de dispositifs médicaux. Un alpha de Cronbach à 0,710, avec une validité convergente élevée, de hauts scores de faisabilité et d'utilité clinique ont été retrouvés auprès des infirmières.

**Conclusion:** Cette étude suggère que la version suisse francophone de la Braden QD est faisable, fiable et valide. Les infirmières ont estimé qu'elle était facile à utiliser et utile pour leur pratique.