McGill Division of Geriatric Medicine

13th Annual Research Day

April 9th, 2010

Vendredi le 9 avril 2010

Soyez le bienvenu à la 13è Journée de recherche de la division de gériatrie de l'université McGill. Nous avons assemblé pour vous ce cahier sur le déroulement de la journée contenant l'horaire des activités ainsi que les résumés des présentations orales et par affiche. Nous espérons que vous aurez une journée très agréable toute en étant instructive.

Friday, April 9th, 2010

Welcome to the 13th Annual McGill Division of Geriatric Medicine Research Day. In this program you will find a general agenda for the conference as well as abstracts relating to the podium and poster presentations. We are pleased that you were able to join us on this occasion and we hope that you will walk away with an instructive experience.

Susan Gold, MD

Lisa Koski, PhD

Johanne Monette, MD

José A. Morais, MD, FRCPC

Isabelle Vedel, MD, PhD

McGill

McGill Division of Geriatric Medicine ◆ Division de Gériatrie de McGill

13th Annual Research Day Conference 2010 ◆ 13e journée de recherche 2010

◆

Nouvel Hôtel & Spa
Montréal, Québec, Canada

Research Day Program ◆ Programme de la journée de recherche

8:00 – 08:30	Continental Breakfast – Welcome (Dorchester) Petit déjeuner continental - Accueil
8:30 – 9:45	**Symposium - Canadian Longitudinal Study on Aging** *Christina Wolfson, PhD* Director, Division of Clinical Epidemiology McGill University Health Centre Professor Department of Epidemiology & Biostatistics & Occupational Health Department of Medicine McGill University
9:45 – 10:00	Coffee & tea / Café et thé (Faubourg)
10:00 – 11:00	Poster session / Présentation des affiches (Faubourg)
11:00 – 12:30	Oral Presentations / Session de présentations orales (Dorchester)
12:30 – 13:30	Lunch / Déjeuner (Restaurant)
13:30 – 14:45	Oral Presentations / Session de présentations orales (Dorchester)
14:45 – 15:00	Jury Deliberation • Coffee and refreshments / Discussions • Café et thé (Faubourg)
15:00 – 15:15	Award Presentations / Prix

Detailed Research Presentations Schedule ◆ Programme détaillé des présentations

Poster Session / Session de présentation des affiches
10:00 – 11:00
Abstracts / Résumés P1 – P18

Oral Presentations AM Session / Session des présentation orales AM
11:00 – 12:30
Abstracts / Résumés O1 – O5 & O11

11:00 – 11:15
O1 –Development of an Acute Functional Status Profile Checklist
Tammy Abramovich-Ostroff

11:15 – 11:30
O2 – Prevalence of antipsychotic use and its associated factors among nursing home residents in Montreal and Quebec City
Dr. Waleed ALEssa

11:30 – 11:45
O3 – Le programme d'enrichissement cognitif (pec): une intervention adaptée aux personnes ayant subi un traumatisme craniocérébral en âge avenacée
Eduardo Cisneros

11:45 – 12:00
O4 – A harmonized and hierarchical measure of physical function post-cardiac surgery
Ina van der Spuy

12:00 – 12:15
O5 – Cardiac function improvement achieved by mesenchymal stem cells to aged rodent recipients is influenced by donor age
Madhur Nayan

12 :15 – 12 :30
O11 – Adult ADHD – a consideration for elderly with executive dysfunction?
A Case of ADHD diagnosed in a 78 year-old man with subsequent improvement with methylphenidate.
Dr. Soham Rej

Oral Presentations PM Session / Session des présentation orales PM
13:30 – 14:45
Abstracts / Résumés O6 – O10

13:30 – 13:45
O6 – Cancer residents in nursing homes
Dr. Sanda Popescu Crainic

13:45 – 14:00
O7 – Clinical Course and Care Gaps in Elderly Patients Following a Hip Fracture at the Montreal General Hospital
Mohammad Auais

14:00 – 14:15
O8 – Nutritional status in an elderly population with type 2 diabetes
Dr. Soghra Jarvandi

14:15 – 14:30
O9 – Cortisol Increases in Mild Cognitive Impairment occur only in individuals who progress to dementia
Genevieve Arsenault-Lapierre

14:30 – 14:45
O10 – Gallstone disease in the elderly : are older patients managed differently ?
Daniel Newman

Poster Session / Session de présentation des affiches 10:00 – 11:00

P1

INHIBITORY FUNCTIONING WITH AGE AND THE RELATION TO WORKING MEMORY DECLINE.

Mervin Blair, Kiran Vadaga, Joni Shuchat & Karen Li

Department of Psychology, Concordia University

Background: The Inhibition Deficit Hypothesis (Hasher, Zacks, & May, 1999) posits that (1) the ability to delete/suppress no longer relevant information declines with age and (2) that subsequently, this information persists in working memory, causing reduced performance on measures of working memory. The present study examined these propositions by using a time course analysis of inhibition and tested the predictive utility of inhibitory efficiency in age-related working memory decline. In two experiments, old (age range: 60-75) and young adults (age range: 18-30) performed a sequential task in which they monitored for a learned sequence of targets among runs of randomly ordered stimuli. Intrusion error rates (responses to already-completed targets) were analyzed to assess inhibitory efficiency. The reading span task was used to measure processing and storage components of working memory. In Experiment 1, a manipulation of interstimulus interval revealed that inhibitory efficiency was reduced over time for older adults for recently completed targets, but was sustained for younger adults. In addition, overall inhibitory efficiency predicted working memory storage. In Experiment 2, task-level interference was increased by increasing the amount of distraction in the sequential task. This manipulation had comparable effects for recently completed targets on younger and older adults' intrusion error rates over the time course examined. Further, overall inhibitory efficiency predicted working memory processing and storage (independent of processing speed effects), likely due to increased processing demands in Experiment 2. Together, these results suggest that the time course of inhibition and the extent to which inhibitory efficiency predicts working memory performance may depend on task-level interference. Further, the results underscore the utility of examining how inhibitory efficiency relates to different working memory components.

P2

COMPARAISON DU PROFIL MÉTABOLIQUE ET HORMONAL ENTRE DES FEMMES OMNIVORES OU VÉGÉTARIENNES.

Marie-Eve Filion [1], Annie Fex [1], Anthony Karelis [1,3,] H. Adlercreutz [2] et M. Aubertin-Leheudre [1,2,3].

[1]*Department of kinanthropology, Université du Québec à Montréal, Montreal, Canada,* [2] *Folkhälsan Research Center, Institute for Preventive Medicine, Nutrition and Cancer, and Division of Clinical Chemistry, University of Helsinki, Helsinki, Finland,* [3] *Institut Universitaire de Gériatrie de Montréal, Montreal, Canada.*

Objectif: Déterminer le profil métabolique, hormonal et alimentaire entre les femmes végétariennes (Veg) et omnivores (Omn). Méthode: Quarante-une femmes Omn et 21 Veg en bonne santé ont été recrutées. Pour être inclus dans le groupe Veg, les femmes devaient suivre cette diète depuis plus de 2 ans. Nous avons mesuré: 1) le profil hormonal sexuel (plasma), 2) le profil lipidique 3) l'insuline et le glucose à jeun 4) l'indice de masse corporelle (IMC), 5) la masse musculaire protéique (créatinine urinaire), 6) volume fécal total, 7) le profil alimentaire (3 jours) et 8) le niveau d'activité physique (questionnaire). Résultat: Le groupe Veg démontre un niveau significativement plus élevé de sex-hormone-binding-globulin (SHBG; $p < 0.001$), d'Apo-A ($p = 0.01$), d'apport en fibres totales ($p < 0.001$), de matière fécale totale ($p = 0.001$) comparativement au groupe Omn. Le groupe Veg présente des niveaux significativement plus bas d'Apo-B ($p = 0.03$), d'estradiol libre ($p = 0.001$), de testostérone libre ($p = 0.01$), de déhydroépiandrostérone-sulfate (DHEA-s; $p = 0.03$), de masse musculaire protéique ($p = 0.04$) et d'IMC ($p = 0.01$). Les différences significatives entre les 2 groupes persistent même lorsqu'on corrige pour l'IMC. Finalement, notre régression linéaire démontre que l'apport en fibres totales est le meilleur prédicteur de la SHBG et que ce dernier expliquerait 15.2 % de la variation de la SHBG. Conclusion: Nos résultats indiquent que le groupe Veg présente des taux plus élevés de SHBG ce qui pourrait être expliqué par les apports plus élevés en fibres totales. Dans son

ensemble, ces résultats suggèrent que les femmes ayant une alimentation végétarienne peuvent être associées à un plus faible risque de développer un diabète de type 2.

P3

EFFET DU CRITÈRE DE DÉTERMINATION DE LA SARCOPÉNIE DE TYPE I SUR LE PROFIL MÉTABOLIQUE DE LA FEMME OBÈSE POST-MÉNOPAUSÉE.

Annie Fex [1], Marie-Eve Filion [1], Antony Karelis [1,2,] Isabelle J. Dionne [3,4] & Mylène Aubertin-Leheudre [1,2].

[1]Département de Kinanthropologie, Université du Québec à Montréal, [2]Centre de Recherche de l'Institut Gériatrie de Montreal. [3]Faculté d'éducation physique et sportive, Université de Sherbrooke. [4]Centre de Recherche de l'Institut Universitaire Gériatrie de Sherbrooke.

Introduction: Les personnes sarcopéniques-obèses présenteraient de plus grandes incapacités physiques, de risques cardiovasculaires que l'une des deux conditions (1). Néanmoins, toutes les recherches ne s'accordent pas sur l'impact de la sarcopénie-obésité sur le profil métabolique (2,3,4). Une des hypothèses émises au niveau de ces divergences seraient les critères de détermination de la sarcopénie (2,3,5). Objectif: Vérifier, chez des femmes post-ménopausées obèses, si le critère de détermination de la sarcopénie a une influence sur le profil métabolique. Méthode: Quatre-vingt dix-neuf femmes post-ménopausées ont été recrutées. Les femmes étaient inclues si elles étaient obèses (% masse grasse > 40%(4)) et sarcopéniques de type I (groupe 1: Immapp<6.44kg/m² (5); groupe 2: Immapp<6.87kg/m² (2) et groupe 3: Immapp<6.75 kg/m² (3)). La composition corporelle (DXA), les paramètres biochimiques, la dépense énergétique de repos (par calorimétrie indirect) et l'apport énergétique (journal) ont été mesurés. Une ANOVA avec un test post hoc de tukey a été réalisée. Résultats: Soixante neuf femmes ont été classées obèses. Parmi elles; 14 ont été inclues pour analyse dans le groupe 1 (20%), 33 dans le groupe 2 (48%) et 27 dans le groupe 3 (39%). Aucune différence significative n'a été observée entre les trois groupes au niveau du profil métabolique (excepté pour la masse maigre appendiculaire). Conclusion: Chez des femmes post-ménopausées obèses, les différents critères déterminant la sarcopénie de type de I ne semblent donc pas influer sur le profil métabolique. Néanmoins, notre population étant métaboliquement saine, de futures études chez d'autres populations sont nécessaires pour généraliser nos résultats. Références: 1) Zamboni et al. 2008; 2) Aubertin-Leheudre et al. 2006; 3) Janssen et al. 2009 4) Baumgartner et al. 2004; 5) Messier et al. 2008.

P4

EFFET DE L'ÂGE SUR LE PROCESSUS DE SURVEILLANCE DE L'ACTION.

Sebstien Barbat, BSc, P. Talbot, BSc, K Fezzani, PhD

Laboratoire Adaptation Perceptivo-Motrice et Apprentissage UFR-STAP Faculté des Sciences et Techniques des Activités Physiques et Sportives, Université de Toulouse, Paul Sabatier.

Introduction: Produire un comportement adapté nécessite la détection et l'analyse de la nature de l'erreur et de sa source (1). Le traitement des erreurs semble une avenue importante dans le contrôle de l'action chez la personne âgée (PA) puisque le vieillissement se caractérise par une perte d'adaptabilité (temps de réponse (2) et variabilité de la réponse (3)). Objectif: Étudier l'effet de l'âge sur le processus de surveillance de l'action. Méthode: Vingt personnes divisées en 2 groupes (PJ: 23±2 ans vs. PA: 71±7 ans) ont été recrutées. Pour être inclus, les sujets devaient obtenir un score >26 chez la PA et >29 chez la PJ au MMSE (4). La Eriksen Flanker Task a été administrée de manière individuelle (5). La tâche évaluée consistait à répondre à différents stimuli à la suite de quoi les personnes reçoivent un feedback (FB) correcte ou un faux FB. Ce dernier correspond à un message d'erreur en présence d'une réponse correcte, introduisant une fausse erreur (FE). Nous avons mesuré le taux de ralentissement et de variabilité (Ecart-Type) des temps de réaction (TR) post-erreur dans les essais consécutifs aux vraies erreurs commises et aux fausses erreurs. Une ANOVA a été réalisée pour comparer les groupes. Résultats: Les PA avaient des TR plus long que les PJ. Le Taux de ralentissement post-erreur était plus important chez les PA que chez les PJ ($p<0.05$). Cette différence liée à l'âge est augmentée en présence des FE ($p < 0.05$). Nous observons les mêmes résultats en ce qui concerne la variabilité post-erreur ($p<0.05$). Conclusion: Nos résultats suggèrent que le traitement des erreurs, notamment des FE, nécessite pour les PA des ressources supplémentaires et entraîne une plus

grande fluctuation du TR. Ceci démontre les effets négatifs de l'âge sur la surveillance de l'action. De futures études explorant: 1) les mécanismes impliqués dans le processus de surveillance de l'action, et 2) le rôle de l'activité physique sur le processus de surveillance de l'action sont nécessaires afin de maintenir l'autonomie chez des PA. Références: 1) Ridderinkhof, K.B. et al., Science 2004; 2) Bherer, L. et al. Psychol Aging 2007; 3) Gunstad J et al., J Integr Neurosci. 2006; 4) Hébert, R. et al. Revue de Gériatrie, 1992; 5) Eriksen, C. W. et al., Perception & Psychophysics 1979.

P5

EFFICACY OF ENERGY UTILISATION AND FATIGUE IN FRAIL OLDER WOMEN.

Jose A. Morais [1], Tamàs Fulop [2], Abdelouahed Khalil [2], Isabelle Dionne [2], Daniel Tessier [2]. *[1]McGill University Health Center-Royal Victoria Hospital, Montreal, [2]University Institute of Geriatrics of Sherbrooke, Sherbrooke.*

Introduction: Fatigue is one of the characteristics defining frailty that could impact on gait speed and physical activity. However, the mechanisms leading to fatigue are still poorly understood. We hypothesized that fatigue is due to a reduction in the efficacy of energy utilisation (EEU) during physical activity in frail older persons. METHODS: We compare 10 healthy (H; 77±4y, BMI: 25±3 kg/m2, MMSE: 29±1) with 10 frail elderly women (F; 83±6y, 26±5 kg/m2, 27±3) during a 6-Minute Walking Test (6MWT) for changes in perceived fatigue using a 10 cm Visual Analogue Scale (VAS). EEU was based on VO2 consumption using a portable Cosmed K4b2 indirect calorimeter adjusted for walking distance. Participants underwent body composition measurements by DXA and venous blood sampling. RESULTS: Groups had similar body composition and levels of IL-1β, IL-6, IL-10, TNF-α, TAS, MDA and Vitamin E. At rest, there were no differences for VO2 or energy expenditure but F had lower heart rate (HR; p=0.005). During 6MWT, (H vs. F), distance: 472±43 vs. 189±68 m, p<0.0001; VO2: 14±3 vs. 11±3 mL/kg•min, p<0.05; HR: 114±18 vs. 92±14 beats/min, p=0.08; EEU: 0.030±0.007 vs. 0.064±0.02 mL/kg•min•m, p<0.0001; changes in VAS: 0.12±1.3 vs. 2.2±2.6 cm, p=0.038. Fatigue did not correlate with any parameter and EEU correlated only with HR (r=-0.48, p=0.033). CONCLUSIONS: Compared with their healthy counterparts, the frail elderly women exhibited lower physical performance and EEU, and perceived more fatigue with activity. Their lower HR points to cardiovascular factors as a cause of lower EEU. The causes of fatigue with frailty warrant further study.

P6

VALIDATION OF INDIVIDUAL SCREENING TEST ITEMS AS INDICATORS OF DOMAIN SPECIFIC IMPAIRMENT.

Parastoo Moafmashhadia, Lisa Koski [a] *Graduate Program in Neuroscience, University McGill [b.] Geriatrics Division, Faculty of Medicine, Centre Universitaire de Santé McGill (CUSM)*

Introduction: With the number of impaired Canadians growing, the early detection of cognitive impairment is being important. Patients with Mild cognitive impairment (MCI) should be monitored , for developing of dementia. Diagnosis of MCI is based on neuropsychological evaluation of cognition. However, neuropsychological assessment is a useful source for few geriatric clinics in Canada and requires waiting for long time. Based on this information the health system requires studies to provide tools in the form of brief screening items that can be used by clinicians in a short period of times and to make better diagnosis about a patient's pattern of cognitive abilities. To have better understanding of patients who are less or more likely to develop dementia, validating these items is essential. In addition, proof of the validity of screening test items as indicators/predictors of domain-specific cognitive abilities will provide opportunities for future studies helped at monitoring and treating specific cognitive impairment. Objective: The objective of the present study is to validate the use of scores on individual screening test items as indicators of impairment in specific cognitive domains, which include: attention, language, memory, visuospatial skills, and executive functions. Methodology: This cross-sectional study will be conducted using clinical data collected in the Geriatric Cognitive Disorders Clinics of the Montreal General Hospital and the Royal Victoria Hospital. The positive and negative predictive value (PPV & NPV) of failed factors will be tested to predict abnormal performance on neuropsychological tests. PPV and NPV are calculated as the proportion of

persons who passed (or failed) a factor, who also showed normal (or abnormal) performance on domains represented by neurological tests. Estimate and confidence intervals will be derived from the data. Logistic regression with binary covariates will be used to test for confounding effects of gender or education that might limit the predictive utility of the items to specific subgroups. Results: It is hypothesized that Individual items or item combinations can predict performance on tests administered as part of a comprehensive neuropsychological assessment. Relevance: The goal of this study is to provide tools in the form of brief screening items that can be used by clinicians to make better diagnosis about a patient's pattern of cognitive abilities. To have better understanding of patients who are less or more likely to develop dementia, validating these items is essential. In addition, proof of the validity of screening test items as indicators of domain-specific cognitive abilities will provide opportunities for further studies aimed at monitoring and treating specific cognitive impairment.

P7

PREDICTING WHO MAY FALL: PHYSIOTHERAPHY FUNCTIONAL ASSESSMENT OF FRAIL ELDERLY INSTITUTIONALIZED POPULATIONS.

Joanne Minelga pht, Guylaine Côté TRP, Marie-Claude Lajoie TRP, Sarah Marshall pht MSc, Tom McFarlane pht, Joanne Minelga pht Clinical Coordinator, Maria Murgante pht and Jacqueline Mai Anh Nguyen, pht student.
Ste. Anne's Hospital, Rehabilitation Services Physiotherapy.

Many risk factors for falls are present in the population of Veterans at Ste. Anne's Hospital, given their advanced age and many physical and cognitive impairments. With the anticipated relocation of residents to newly renovated nursing units, it became timely to identify risk of falls in residents, as part of a fall prevention program. It was hypothesized that residents who were assessed by Physiotherapy and identified as being at high risk of falls would fall more than those identified as being at low and moderate risk. In total, 172 elderly institutionalized residents from eight nursing units were evaluated for risk of falls. Physiotherapy evaluation included valid and reliable objective measures such as: gait speed, Tinetti balance and mobility scale and the sit-stand test. Other physiotherapy tests used were: functional walking distance and evaluation of gait and transfers. Residents were classified into one of three levels for risk of falls: low, moderate or high. Data on the number of falls were collected and analyzed to explore the association between the different risk levels, the frequency of falls and the proportion of residents who fell. Results suggest that there is a relationship between the assessed risk of fall level and the frequency of falls. Moreover, a Chi Square ($\chi 2$) test of the data yielded a value of 11.53, p=0.003. This suggests that there is a significant difference between each of the three risk levels and the proportion of residents who fell, with the highest percentage of fallers occurring in the high risk level group.

P8

EFFECTS OF COGNITIVE INTERVENTIONS ON MEMORY ABILITIES IN INDIVIDUALS WITH MILD COGNITIVE IMPAIRMENT.

Jerine Nirojini Anton Jeyaraj, Sue Konsztowicz, B.Sc., Joelle Crane, Ph.D., Lisa Koski, Ph.D.
Concordia University

The objective of the current study was to evaluate the effects of two different short-term cognitive interventions on the subjective reports of memory abilities in older adults with mild cognitive impairment (MCI). Twenty-two participants over the age of 65 from the Montreal General Hospital and the Royal Victoria Hospital were randomized into a memory training (n = 10), a memory compensation (n = 8), and a wait-list (n = 4) group for a duration of seven weeks. The treatments consisted of one session per week. The participants in the memory training group were trained to use mnemonic strategies to compensate for their memory impairments. The participants in the memory compensation group were trained to use an external aid—an agenda—to log their daily activities in order to compensate for their memory impairments. The subjective memory abilities were measured pre- and post-intervention by the ability subscale of the Multifactorial Memory Questionnaire. In comparison to the other groups, the memory training intervention produced a large change in memory ability scores (M = 10.91, SD = 9.67), a large effect size (ES = 1.13) as well as a confidence interval in the positive range (95% CI [2.82-18.99]). This suggests that the participants in this group believed that their memory abilities improved following treatment and there was a

positive intervention effect. The results show that the memory training program, although not powered enough to generalize to a larger population, can be used to make power calculations in future studies and to conduct larger-scale studies, on the basis of its large effect sizes. It has also been shown, in this pilot study, to be a useful treatment program for elderly adults with MCI.

P9

A NOVEL WAY OF ASSESSING HEALTH AND VULNERABILITY IN OLDER NEWLY-DIAGNOSED CANCER PATIENTS: RESULTS OF A PROSPECTIVE PILOT STUDY.

Martine Puts, PhD [1,2,3], J. Monette, MD, MSc [1.4,] V.Girre[5], MD, MSc, C. Pepe [6], MD, M. Monette1, MSC, S. Assouline [7], MD, L. Panasciy ,MD, M. Basiky, MD, WH. Miller JRy MD, G. Batisty MD, C. Wolfson [2,8], PhD, H. Bergman [1,4]MD.

[1.] Solidage Research Group on Frailty and Aging, Jewish General Hospital (JGH), [2]. Department of Epidemiology, Biostatistics and Occupational Health, McGill University, [3]. Faculty of Nursing, University of Toronto, [4]. Division of Geriatric Medicine, JGH [5.] Department of Medical Oncology, Institut Curie, Paris, France, [6]. Division of Pulmonary Medicine, JGH [7]. Segal Cancer Centre, JGH [8.] Division of Clinical Epidemiology, McGill University Health Centre

Background: The concept of frailty may be useful to characterize vulnerability in older patients. The aim of this study was to explore the association between frailty and outcomes of cancer and its treatment. Methods: A prospective cohort study conducted with patients referred to the JGH, aged ≥ 65 with a new diagnosis (breast, colorectal or lung cancer or lymphoma or myeloma). The frailty markers were measured during face-to-face interviews at 0, 3 and 6 months and the diagnosis, stage, treatment and toxicity were abstracted from the medical chart. The frailty markers include mobility impairment, low grip strength, physical inactivity, nutrition impairment, fatigue/low level of energy, mood impairment and cognitive impairment. The toxicity was graded using the CTCAE criteria (grade 3-5 used for analyses). The use of health care (hospitalization, emergency room and general practitioner visits) was self-reported. Logistic regression and Cox regression analyses were conducted. Results: N=112 participants (response 72%), mean age 74.2. At baseline, 89% had ≥1 frailty markers (most common= mobility impairment). Thirty-one patients had grade 3-5 toxicity during the first 3 months and 15 patients died during the 6-month period. Low grip strength predicted toxicity at 3 months and cognitive impairment predicted emergency room visits. No frailty marker was found to be associated with mortality, hospitalization, and general practitioner visits. Conclusion: The majority of newly-diagnosed cancer patients had frailty markers at baseline. Our study did not reveal strong association between frailty markers and adverse outcomes. Further studies are needed to confirm these findings.

P10

LA CONSOMMATION D'ALIMENTS FONCTIONNELS EST-ELLE ASSOCIÉE AU STATUT ANTIOXYDANT TOTAL CHEZ LA PERSONNE ÂGÉE?

Ouardia Belkacemi, Hélène Payette, Bryna Shatenstein, Tamas Fûlop, Abdelouahed Khalil.

Programme des sciences cliniques, Département de Médecine, Institues universitaires de gériatrie (Sherbrooke, Montréal), Faculté de médecine et des sciences de la santé.

Le statut antioxydant total (TAS) reflète la capacité globale de l'organisme à se défendre contre les espèces réactives de l'oxygène. Ces dernières peuvent entraîner des dommages au niveau cellulaire (ADN, protéines, lipides), dont le cumul dans le temps se traduit par l'apparition de plusieurs pathologies susceptibles d'altérer la qualité de vie des personnes âgées. L'objectif de notre étude est d'évaluer la relation entre la consommation d'aliments fonctionnels riches en antioxydants (AFRAO) et le TAS chez la personne âgée en bonne santé. Méthodologie : Les données recueillies à l'entrée dans l'étude de 330 personnes âgées de 67 à 84 ans sélectionnées aléatoirement parmi les 1793 participants de l'étude longitudinale NuAge (cohorte sur la nutrition et le vieillissement réussi) ont été utilisées. Le TAS a été mesuré par spectrophotométrie et corrigé pour l'albumine et l'acide urique, La consommation habituelle d'AFRAO a été mesurée par un questionnaire validé de fréquence de consommation comprenant 27 AFRAO. Les niveaux plasmatiques de vitamine C et de Malon-dialdéhyde mesurés par HPLC, ainsi que l'indice de masse corporelle (IMC=poids (kg)/taille (m)

²) et le sexe, sont considérés comme des facteurs de confusion.
Résultats : Le nombre d'AFRAO consommé quotidiennement est positivement corrélé au TAS (r=0,314, p<0,001). Un modèle de régression multivarié montre que l'association entre la fréquence de consommation des AFRAO et le TAS demeure significative après ajustement pour les variables de confusion potentielles (sexe, MDA, la vitamine C, IMC). Conclusion : L'ajout d'un AFRAO dans la diète journalière est associé à une augmentation du TAS de 1.3%; ce qui pourrait réduire le stress oxydant et ainsi promouvoir le vieillissement en santé.

P11

PREDICION RESULTS IN THE INTERNATIONAL DATABASE INQUIRY ON FRAILTY (FrDATA) STUDY.

Sourial N[1,2], Wolfson C[4,5], Bergman H[1,2,3], Fletcher J[1,2], Puts M[1,2], Zhu B[4], Karunananthan S [1,2] , Béland F [1,2,6]

[1]. Solidage, McGill University/Université de Montréal Research Group on Frailty and Aging, Lady Davis Institute for Medical Research, Jewish General Hospital, Montreal, Quebec [2]. Centre for Clinical Epidemiology and Community Studies, Jewish General Hospital, Montreal, Quebec [3]. Department of Geriatric Medicine, McGill University, Montreal, Quebec [4]. Division of Clinical Epidemiology, McGill University Health Centre, Montreal, Quebec [5]. Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, Quebec [6]. Faculté de Médicine, Université de Montréal, Montreal, Quebec

Purpose: To examine the ability of seven candidate frailty domains (nutrition, physical activity, mobility, strength, energy, cognition, and mood) to predict adverse outcomes and compare results using data from several international studies. Methods: Two adverse outcomes, mortality and incident ADL disability, were studied. Ten frailty models were created and compared: one for each of the domains, the Fried (2001) model, all domains in a multivariate model and a model with the number of deficits (0-7). All models were adjusted for age, sex and comorbidity. The statistical significance of frailty predictors within each model was assessed and the model with the best predictive fit was determined. The Area Under the Curve (AUC) was used as quantify the discrimination accuracy of the model and the improvement in accuracy was compared to a model with only age, sex and comorbidity. Results: Across the studies, most domains were associated with the outcomes when taken individually but the effects were attenuated or removed when examined in the multivariate model. The "best" frailty model was most often found to be simply with the total number of frailty deficits (0 to 7). However, even in this case, the increase in AUC above the inclusion of age, sex and comorbidity was only ~ 3%. Conclusions: Preliminary results seem to indicate that frailty was associated with these adverse outcomes. The results further suggest, however, that as a prognostic tool, the addition of frailty may add very little to the discrimination accuracy beyond age, sex and comorbidity.

P12

PSYCHOSOCIAL DETERMINANTS OF COGNITIVE FUNCTION IN A LONGITUDINAL STUDY OF RETIREES.

Larry .H. Baer, M. Blair, V. Raccio, S. Torok, K. Z. H. Li, D. Pushkar

Centre for Research in Human Development Concordia University, Montreal, Quebec, Canada

The significant milestone of retirement can have profound effects on many aspects of an individual's life, including mental and physical health. Occurring as it usually does at the threshold of old age, retirement often coincides with a period of increased risk for the development of mild cognitive impairment (MCI) and later dementia. Thus, the identification of risk factors for cognitive decline and protective factors for maintenance of cognitive function at this stage of life is an important step in identifying at-risk groups and designing primary and secondary interventions to reduce the prevalence of MCI and dementia. A variety of psychosocial factors were assessed amongst 328 recent retirees (mean age = 59 years, SD = 4.87; 51.8 % female) at four annual measurement periods for the Concordia Longitudinal Retirement Study. Overall cognitive function was measured during the last two time points using the Montreal Cognitive Assessment screening test (MoCA) for MCI. The design of a cross-lagged path model predicting cognitive function will be described, involving age, education level, physical and cognitive activity levels, the need for cognition, sleep, and mood. Analysis thus far using structural equation

modeling shows a longitudinal effect of mood on cognitive function (chi-squared = 37.22, p = 0.17, CFI = 0.99, RMSEA = 0.03) such that depressed mood at the second time point, T2, predicts lower MoCA scores at time T3.

P13

THE CANADIAN LONGITUDINAL STUDY ON AGING : A SNAPSHOT OF OUR DEVELOPMENTAL WORK.

Christina Wolfson [1, 2, 3], Parminder Raina [4], Susan Kirkland [5] and Jennifer Uniat [1] on behalf of the CLSA research team

[1] Division of Clinical Epidemiology, McGill University Health Centre [2] Department of Epidemiology and Biostatistics, McGill University [3] Division of Geriatric Medicine, McGill University [4] Department of Clinical Epidemiology and Biostatistics, McMaster University [5] Departments of Community Health and Epidemiology and Medicine, Dalhousie University

The Canadian Longitudinal Study on Aging (CLSA) is a large, national, long-term study of adult development and aging designed to examine health transitions and trajectoires with the goal of identifying modifiable factors with the potential to develop interventions to improve the health of the population as they age. The CLSA will recruit 50,000 people across Canada between the ages of 45 and 85 years at baseline and follow them for at least 20 years. Before launching such a complex study, the CLSA research team completed more than 7 years of developmental work that included feasibility and pilot studies. Focus groups and face-to-face and telephone interviews were convened across the country by the CLSA research team as part of the planning process. Topics of interest included potential participants' views on their involvement in a long term study and the return of clinical information to them or their physician, appropriateness and feasibility of strategies for collecting blood and urine samples, feasibility of data linkage to health and provincial databases, and the assessment of logistics of data collection methods and data transfer for text materials. Results of these feasibility studies have guided the final design of the CLSA. The developmental work conducted over the past 7 years has been an essential component in designing the implementation strategy for the CLSA. Key findings from the feasibility studies will be presented.

P14

THE CANADIAN LONGITUDINAL STUDY ON AGING: EVALUATING A RECRUITMENT STRATEGY.

Christina Wolfson [1, 2, 3], Parminder Raina [4], Susan Kirkland [5], Jennifer Uniat [1], Mark Oremus [4], Camille Angus [5], Natasha Clayton [4], Josette Dupuis [1], Lauren Griffith [4], Olga Kits [5], Deborah Weiss [1, 2]

[1] Division of Clinical Epidemiology, McGill University Health Centre [2] Department of Epidemiology and Biostatistics, McGill University [3] Division of Geriatric Medicine, McGill University [4] Department of Clinical Epidemiology and Biostatistics, McMaster University [5] Departments of Community Health and Epidemiology and Medicine, Dalhousie University.

The Canadian Longitudinal Study on Aging (CLSA) is a large, long-term study of adult development and aging that will recruit 50,000 Canadians between 45-85 years of age and follow them for at least 20 years. The CLSA research team collaborated with Statistics Canada (SC) to use the 2008-2009 Canadian Community Health Survey on Healthy Aging (CCHS 4.2) as a recruitment vehicle for the CLSA. This presentation will describe our experiences in evaluating the feasibility of this recruitment strategy. In preparation for this collaboration, as part of the CCHS 4.2 pilot conducted by SC in December 2007, SC trained interviewers asked participants if they would be willing to share their contact information with the CLSA research team. Subject to the requirements of a Memorandum of Understanding concerning confidentiality and security of data, signed between SC and each of the 3 lead universities (McMaster, McGill and Dalhousie), the contact information was sent to the CLSA team. A CLSA pilot study was then conducted to assess the recruitment process. Information packages were mailed to potential participants and CLSA interviewers followed up by telephone to determine if they agreed to participate. Interviews were conducted immediately or scheduled at a convenient time. Results of the recruitment process will be presented.

P15

THE CANADIAN LONGITUDINAL STUDY ON AGING: A DAY AT THE DATE COLLECTION SITE.

Christina Wolfson [1, 2, 3], Parminder Raina [4], Susan Kirkland [5] and Jennifer Uniat [1] on behalf of the CLSA research team

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The Canadian Longitudinal Study on Aging (CLSA) is a Canada-wide study of 50 000 people between the ages of 45 and 85 years at baseline. These persons will be followed for at least 20 years. All 50,000 participants will be asked to provide a core information set of data on demographic and lifestyle/behaviour measures, social measures, physical/clinical measures, psychological measures, economic measures, health status measures and health services use. Thirty thousand of the 50,000 (i.e. the CLSA Comprehensive) will be asked to supplement the core set with in-depth information obtained via physical examinations and biospecimen collection. The remaining 20,000 (CLSA Tracking) will provide the core information set only. For the purposes of this presentation, we will be focusing on the CLSA Comprehensive. As part of their participation in the CLSA Comprehensive, participants will be asked to visit a local data collection site (DCS) to allow for the collection of data on neuropsychological function, physical function (i.e., grip strength, timed-up-and-go, chair rise, four-meter walk test), anthropometrics (i.e., height, weight, waist and hip circumference, standing balance, lean muscle mass), and clinical variables (i.e., blood pressure, mean heart rate, vision, hearing, lung function). These participants will also be assessed for bone density, aortic calcification and carotid intima-media thickness. Finally, for the participants who have given their consent, blood and urine samples will be collected during the DCS visit. Visits to DCS will occur at three-year intervals following the completion of in-home recruitment interviews. Data collection sites will be established in 11 cities: Victoria, Vancouver, Burnaby, Calgary, Winnipeg, Hamilton, Montreal, Ottawa, Sherbrooke, Halifax and St. John's. The components of the DCS visit described will be outlined in our presentation "A Day at the DCS".

P16

LATENT CLASS ANALYSIS OF COGNITIVE PERFORMANCE IN GERIATRIC PATIENTS UNDERGOING NEUROPSYCHOLOGICAL ASSESSMENT.

Susanna Konsztowicz, Natalia Zienczuk, Jasmine Cady, Johanne Higgins, Norbert Schmitz, Lisa Koski.

Department of Neurology and Neurosurgery, McGill University

Objective: To identify and characterize subgroups of cognitive performance in a clinical sample of geriatric patients undergoing neuropsychological assessment for suspected cognitive decline. Participants and Methods: The study sample consisted of 188 patients over the age of 60 who presented with cognitive complaints and were referred for neuropsychological assessment at the McGill University Health Center's geriatric clinics. Demographic variables and standardized test scores for 7 neuropsychological tests selected to represent specific domains of cognitive function were extracted from our clinical database. Continuous test scores were categorized into 2, 3 and 4 categories based on standard cut-off values used in geriatric neuropsychology. We predicted that there may exist 2 to 4 different classes or patterns of cognitive performance among our sample, and thus we conducted exploratory latent class analysis (LCA) on 2, 3, and 4-class models. We used parsimony indices as well as interpretation of class meaning to guide the comparison of models. Results: Similar findings were obtained with all categorization schemes, thus we report here the analyses of 2-category (impaired/unimpaired) scores. The 2-class model revealed a group of patients who performed poorly on tests of immediate and delayed-memory recall and a group of patients who performed well on all subtests. The 3-class model again revealed the previous groups, and in addition, a group of patients who performed poorly on tests of visuo-spatial function and processing speed. The 4-class model was rejected on the basis of poor model fit. Conclusions: We have identified 3 subgroups of patients attending the geriatric clinics that we hypothesize may differ with respect to

underlying pathology and therefore diagnosis. This can be tested by including additional clinical information (ie. history, imaging data) in future analyses. Increasing our understanding of patterns of cognitive performance may improve efficiency of early diagnosis and intervention in our clinics.

P17

DE L'UTILITÉ DE LA « FORCE DE POIGNE ». .

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But : Dans le cadre d'une étude de la fragilité chez les personnes âgées vivant à domicile nous avions besoin d'évaluer leurs capacités physiques. La force de préhension est reconnue comme étant le reflet de la capacité musculaire globale. Pour mesurer cette force de préhension, nous comparons trois instruments pour trouver le plus approprié à cette population. Méthodologie : La force de préhension a l'avantage d'être facilement administré à domicile. Le dynamomètre Jamar et les vigorimètres Martin et Baseline ont été utilisés pour cette comparaison. Les 3 instruments ont été calibrés en utilisant des poids étalons. Un échantillon de 24 personnes âgées vivant à domicile âgées a été sélectionné au hasard avec un nombre égal d'hommes et de femmes et selon 3 groupes d'âges (65-74; 75-84; 85 et plus). Les normes d'utilisation de ces instruments ont été respectées. Le sujet est assis sur une chaise avec le membre supérieur (épaule) en adduction, le coude fléchi à 90o et l'avant bras en position neutre, le poignet en légère extension (0 à 30o). Trois mesures successives pour chacune des mains sont réalisées en alternance. La circonférence de la main est mesurée pour choisir la poire la plus appropriée (vigorimètre). Pour le Jamar, le cran de la poignée est ajusté en fonction de la main du sujet. Résultats : La force de poigne des femmes est en moyenne de 52 et 56 kPa pour les vigorimètres et de 38 lbs-poids pour le dynamomètre. Pour les hommes, on obtient 65 et 67 kPa ainsi que 78 lbs-poids respectivement. Par ailleurs, les femmes sont plus fortes en utilisant le vigorimètre alors que les hommes sont plus forts avec le dynamomètre. Des analyses statistiques descriptives ont été effectuées. L'utilisation du dynamomètre conduit lors de la représentation statistique à 2 populations séparées entre les hommes et les femmes alors que les vigorimètres donnent lieu à une distribution plus homogène de l'échantillon. Conclusions : Le vigorimètre permet d'utiliser la poire la mieux adaptée à la morphologie de la personne âgée. Il a l'avantage d'être confortable pour une population ayant des limitations musculaires et fonctionnelles. Son confort de préhension en fait un instrument adapté à des populations qui souffrent particulièrement de pathologies ostéo-articulaires de la main. Nous recommandons l'utilisation du vigorimètre pour la mesure de la force de poigne dans le cadre d'une étude de la fragilité chez la personne âgée.

P18

INFORMATION TECHNOLOGY IN GERIATRICS: A TYPOLOGY IN SUPPORT OF IT DIFFUSION

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Background: Information technology (IT) represents a promising avenue for improving healthcare delivery and health outcomes, particularly in geriatrics and in chronic disease care. Yet, despite the expected benefits for implementing IT, there is evidence of numerous accounts of IT implementation failures and low adoption rates. We are presenting an IT typology from which we derived recommendations regarding the diffusion of IT in geriatric. Methodology: A comprehensive search of 4 databases (Medline, EMBASE, PsychInfo, ABI/Inform Global) was conducted for studies and reviews about implementation of IT or IT impacts in healthcare. Articles were selected on the basis of the title, abstract and full text by one researcher; the results were validated by two additional researchers. The proposed typology was developed based on IT functionalities, type of users, and rationale for IT usage. The diffusion process was assessed using the Diffusion of Innovation theory. Results and Conclusions: 431 potentially relevant studies were identified. 229 studies were excluded and the final sample included 202 articles. Seven categories of IT were generated: electronic

health records (EHR), decision support systems (DSS), telecare, web-based package for patients/ family caregivers, assistive technology, IT for professional education, IT for research. Results showed that diffusion issues vary according to the type of IT. Relative advantage was linked to impacts on clinicians' practices and care process, health outcomes, satisfaction and efficiency. Compatibility was associated to compatibility with needs of potential adopters, consistency with past experiences and existing values. Complexity was linked to ease of use, usability, IT understanding and technical issues. Issues of observability and triability were rarely addressed. Recommendations for an optimal IT diffusion are provided in general and for each type of IT.

Oral Presentations AM Session / Session des présentation orales AM
11:00 – 12:30

O1

DEVELOPMENT OF ACUTE FUNCTIONAL STATUS PROFILE CHECKLIST.

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Background: The McGill University Health Center (MUHC) focuses on managing patient stays and discharge planning to avoid delays and inappropriate places of discharge. OASIS, the MUHC electronic record assists care by providing real-time data on tests ordered, their results, and drug information. Function is not captured on OASIS; when function is assessed, it is not coded and remains hidden in the chart. Function drives length of stay, discharge destination, community care resources and future health care utilization. If patients' functions could be captured, in a coded format; the data could be used to identify persons at high risk for delay or change in discharge destination. The International Classification of Functioning, Disability and Health (ICF) provides a coding system for function. The study aims to develop a standardized method, the Acute Functional Status Profile Checklist, to identify functional limitations impacting on patients' care. Methods: As the geriatric population has a high rate of functional status limitations, the geriatric units of the MUHC were chosen to develop and test this Checklist. Development progressed through five steps including; interviews with stakeholders, focus groups to define the functions, mapping of functional items to ICF codes, testing the form prospectively in patients' charts and retrospectively in 100 other randomly selected charts, and developing patient profiles. Results Twenty-nine professionals participated. A preliminary form with 35 items was generated. Major implementation barriers were time commitment and compliance; facilitators were a simple form with a supporting champion. The charts were difficult to navigate, information was hard to find, important functions were poorly quantified or missing. Revising and coding of the form continues. The retrospective chart audit profile sample was mostly female (69%), 84 years old, with 68% older than 80, and 33% at home alone. On admission, 67% of the sample was incontinent, 23% was non-ambulatory and 55% was disoriented. Conclusion The preliminary Acute Functional Status Profile Checklist shows potential to characterize patients. The Checklist requires refinement and retesting. Once finalized the paper version would be the first step towards an electronic one.

O2

PREVALENCE OF ANTIPSYCHOTIC USE AND ITS ASSOCIATED FACTORS AMONG NURSING HOME RESIDENTS IN MONTREAL AND QUEBEC CITY.

Waleed Alessa MD[1], J Monette MD, MSc,[1,2,3] J McCusker MD, DrPH,[4] M Cole MD[5], P Voyer inf, PhD[6], N Champoux MD, MSc,[7] A Ciampi PhD[4], N Sourial MSc[2], M Monette MSc[2,3], E Belzile MSc.[4]
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Background: Inappropriate prescribing of antipsychotic drugs is of concern by Health Canada. The proportion of residents receiving antipsychotics in Canadian nursing homes (NH)

has been reported to vary between 25 and 33%. The relationship between NH environmental factors and antipsychotic use has received little research attention. This study aimed to 1) determine the prevalence of antipsychotic use among NH residents and 2) evaluate the association between environmental and other resident factors with antipsychotic drug use. Methods: A cross-sectional study of 280 residents ≥ 65 based on baseline data from a multi-site cohort study on delirium among NH residents. Data were collected at 4 NH in Montreal and 3 in Quebec City. For the purpose of our secondary analysis, the following environmental factors were assessed: single room, restraints, surrounding too noisy/quiet, presence of radio/television, clock/calendar, phone, family or staff. Resident factors included age, sex, length of stay, functional status, depression, cognition, behavior, and nurse burden. Logistic regression was used to assess the association of potential risk factors on antipsychotic use. Results: Mean age was 84.9 (SD 7.0) with 56% female. Overall prevalence of antipsychotics was 31% (26% - 50%). Shorter length of stay (OR= 0.85, 95 % CI = 0.73-0.98) and behavior problems (OR= 1.22, 95 % CI = 1.11-1.35) were significantly associated with antipsychotic use. No significant associations were found with the environmental factors. Conclusion: Overall prevalence of antipsychotics is consistent with Canadian reports. Based on our results, environmental factors do not appear to be related to antipsychotic use. Given limitations of secondary analyses, properly designed studies are needed to confirm these findings.

O3

LE PROGRAMME D'ENRICHISSEMENT COGNITIF (PEC) : UNE INTERVENTION ADAPTÉE AUX PERSONNES AYANT SUBI UN TRAUMATISME CRANIOCÉRÉBRAL EN ÂGE AVANCÉ.

Eduardo Cisneros [1,2,3], Élaine De Guise[4], Sylvie Belleville[3,5] et Michelle McKerral[1,2,3]

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L'interaction entre l'accélération du vieillissement démographique et l'incidence du traumatisme craniocérébral (TCC) en âge avancé permet de prévoir une augmentation significative des cas de personnes âgées avec un TCC dans les années à venir. Les actuels programmes de réadaptation, conçus pour des adultes plus jeunes, sont peu appropriés aux personnes TCC âgées. Il est impératif de développer des modèles de réadaptation adaptés aux particularités neurologiques, physiques et psychosociales liées au vieillissement car elles rendent la personne plus vulnérable en cas de TCC, même léger. L'objectif de la présente étude est d'évaluer, via un essai clinique multicentrique, l'efficacité du Programme d'enrichissement cognitif (PEC) qui est le 1er programme d'intervention de son genre à avoir été façonné spécifiquement pour les personnes âgées qui subissent un TCC et à être évalué systématiquement en contexte de réadaptation. Le PEC est évalué en comparant son effet sur la fonction cognitive, le bien-être et les habitudes de vie chez deux groupes (expérimental et liste d'attente) de personnes ayant eu un TCC en âge avancé. Des mesures sont prises avant et après le PEC, et 6 mois plus tard. Le groupe expérimental débute le PEC immédiatement après l'évaluation initiale, tandis que le groupe liste d'attente débute après une réévaluation 12 semaines plus tard. Ce devis permet l'administration du PEC à tous les sujets, diminuant les implications éthiques liées à la non-intervention. Quelques données pilotes seront présentées et les résultats attendus de l'étude seront décrits en termes d'efficacité du fonctionnement cognitif (tests neuropsychologiques), du bien-être psychologique (des questionnaires) et des habitudes de vie évaluées en milieu naturel. La communication terminera par une discussion des principales retombées cliniques potentielles pour le réseau de la réadaptation, ainsi que pour l'ensemble du continuum de services en traumatologie.

O4

A HARMONIZED AND HIERARCHICAL MEASURE OF PHYSICAL FUNCTION POST-CARDIAC SURGERY.

Ina van de Spuy

School of Physical and Occupational Therapy,, McGill University

Background: The success of the surgery in the elderly cannot be judged solely by its effects on mortality, but should be verified by its influence on "quality of life" (QOL). QOL depends on the

extent and quality of recovery following surgery. To quantify recovery, inherently improvement in function, we need a measure. While measures for assessing functional status before and following cardiac surgery exist, a measure satisfying the properties of a true interval measure, and which could be used to quantify surgical recovery, is currently not available. Rasch analysis has been used to develop, summarize, refine, and combine items from different indices condensing physical function into a single measure. Purpose: To construct a cardiac surgery physical function scale to quantify recovery following cardiac surgery from items of various questionnaires and functional measures using Rasch analysis. Methods: The data were from 40 patients interviewed and assessed pre-surgery and followed for 12 months. Fifty two items from six indices were used to assess physical function. In addition, information was collected on influencing variables. Two statistical methods, principle component analysis (PCA) and Rasch analysis, confirmed the item factor structure, hierarchy, and dimensionality of the measure, and fit to the model. The worst fitting items were removed iteratively until the best fit of the data was achieved. Results: A 22-item unidimensional measure of physical function was developed. The empirical ordering of the items by difficulty was consistent with theoretical assumptions, supporting the internal validity of the measure. The reliability of the hierarchy is excellent as the person and item reliability indices are above 0.90. The spread of the items covers 7 logits (> 3 S.D.), covering the abilities needed for basic function and mobility, and physically demanding activities, all of which are important for full function (recovery) following major surgery. Conclusion: The 22-item prototype for measuring physical function could be used as a measure to quantify recovery following cardiac surgery in the elderly. The current measure, validated quantitatively with PCA and Rasch analysis on a representative sample, forms the basis of a measure of physical function that needs to be retested to ensure the stability of the response categories and the sensitivity of the measure.

O5

CARDIAC FUNCTION IMPROVEMENT ACHIEVED BY MESENCHYMAL STEM CELLS TO AGED RODENT RECIPIENTS IS INFLUENCED BY DONOR AGE.

Madhur Nayan, Guangyong Chen

Surgical Research, McGill University

Objective: Bone marrow-derived mesenchymal stem cells (MSCs) have been studied for cell-based therapy in the treatment of myocardial infarction (MI). While these studies mainly used young animal models, in the clinical setting most patients who may benefit from such therapy are older patients. Recent in vitro studies reveal that MSCs obtained from older donors show quantitative and qualitative senescent changes, thereby limiting their therapeutic efficacy. Thus, we hypothesized that aged patients may not obtain full advantage of cell therapy when their autologous MSCs are used as donor cells. A better outcome may be achieved if aged patients are given allogeneic MSCs obtained from young healthy donors. Methods: Sprague-Daley (SD) rats (n=20), approximately 56-weeks-old, underwent left coronary artery ligations and were randomized into 3 groups, injected respectively with lacZ-labeled MSCs from old (O) or young (Y) SD rats, or coronary ligation (L) alone. These rats underwent weekly blinded echocardiography to evaluate left ventricular ejection fractions (LVEF). Upon sacrifice at 16 weeks, scar extra-cellular matrix (ECM) deposition and extent of myocardial injury (Score 1=mild, 2=moderate, 3=severe, 4= highly severe) were analyzed. Results: Beta-gal staining of the LV revealed lacZ-labeled MSCs at 16 weeks, indicating the survival of implanted cells. LVEF improved in both cell therapy groups compared to control group. However, at later stages of the study (>10 weeks post-op), group Y showed significantly better functional recovery than group O and L (by ANOVA and Tukey's). At 16 weeks, scar ECM deposition (% of LV cross-sectional area) also decreased significantly in group Y (O= 28.7 ±2.9% vs Y= 13.2 ±3.0% vs L=16.5 ±1.2%, $p<0.01$). In group O, infiltration of fibrotic tissue within residual cardiomyocytes, edema, and congestion were more severe (O= 3.12 ±0.52% vs Y= 1.55 ±0.23% vs L=3.53 ±0.34% $p<0.05$). Conclusions: This study demonstrates that donor age affects the longer-term beneficial outcome of MSC therapy in elderly recipients with MI. The significant difference between young and old donor cells suggests the possible advantage for allotransplanting MSCs from young donors to elderly patients.

O11

ADULT ADHD -A CONSIDERATION FOR ELDERLY WITH EXECUTIVE DYSFUNCTION? A CASE OF ADHD DIAGNOSED IN A 78 YEAR-OLD MAN WITH SUBSEQUENT IMPROVEMENT WITH METHYLPHENIDATE.

Soham Rej, MD, Wendy Chiu MD, FRCP(C), Linda Talaslian, RN
Psychiatry, McGill University

We present the case of a 78 year-old man meeting criteria for ADHD, combined hyperactive and inattentive subtype, with symptoms present in childhood, prior to a previous CVA, and in the absence of confounding psychiatric history, dementia, or delirium. Significant improvement of his symptoms was noted – his Adult ADHD Investigator Symptom Rating Scale (AISRS) score fell from 33 to 11 after 2 weeks of treatment with methylphenidate 2.5mg once daily, where previous psychosocial attempts to help his symptoms had been unsuccessful. Unfortunately, long term follow up/increasing his methylphenidate dose was not possible due to his death of unknown cause, despite his stable medical condition, lack of contraindications prior to starting methylphenidate, and the well established safety of using this medication in the elderly for other indications. The case underlines the importance of including previously undiagnosed ADHD in the differential diagnosis for geriatric patients with hyperactive, impulsive, or inattentive symptoms and of searching for previous symptoms in the child/adulthood history. Interesting features of this case, the eldest patient and second geriatric patient thusfar reported in the literature, is the presence of hyperactive symptoms, which is atypical of adult ADHD (which is predominantly inattentive). It may be the case that the natural course of ADHD is to return to the childhood pattern that includes hyperactivity, or that medical comorbities/the aging brain may be more inclined to hyperactivity/disinihibition, although more research needs to be performed to verify these hypotheses.

Oral Presentations PM Session / Session des présentation orales PM
13:30 – 14:45

O6

CANCER RESIDENTS IN NURSING HOMES

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Background: With the aging of the population, the absolute number of cancer patients will increase, and the number of those admitted to nursing homes (NH) is expected to increase as well; most information regarding the NH residents with cancer is coming from administrative databases. The objectives of the study were to 1) determine the prevalence of residents diagnosed with cancer at Maimonides Geriatric Center (MGC), and 2) document the information available on their cancer and its management. Methods: A cross-sectional chart review of residents with a diagnosis of cancer at MGC (n=387). Residents were identified using their administrative database and the key words: tumor, cancer, carcinoma, adenocarcinoma, lymphoma, leukemia, melanoma, and myeloma. A descriptive analysis was conducted. Results: Among the 75 (19.4%) residents identified with cancer, mean age was 87.0 (SD 9.0) with 65.3% female and mean length of stay was 2.5 (SD 2.2) years. Among them, 68% had dementia, 38.7% had depression, 28% had both dementia and depression and 28% had behavioral and psychological symptoms of dementia (BPSD). The mean number of chronic diseases was 5.1 (SD 1.9). The majority (92%) were diagnosed with cancer prior to admission. Most frequent cancers were breast, colon, and prostate and 30% had > 1 cancer. Thirty residents (40%) had active cancer, and only 13.2% received treatment during NH stay: 10.6% hormonal therapy, 1.3% chemotherapy and 1.3% surgery. Information about cancer was available for: diagnosis date (74.6% of residents), stage (6.7%), histology (4%), treatment received (74.6%), and follow-up (6.7%). Among the 75 residents, only 1 had complete information regarding its cancer, including prognosis. Conclusion: Almost 20% of

the residents at MGC have a diagnosis of cancer and 40% are still active. However, the information related to cancer is lacking and given the high prevalence of dementia, depression, BPSD and multiple chronic diseases, their optimal management remains challenging. There is also a lack of guidelines and consensus in this cancer population. More studies are needed to confirm these findings and address the identified issues.

O7

CLINICAL COURSE AND CARE GAPS IN ELDERLY PATIENTS FOLLOWING A HIP FRACTURE AT THE MONTREAL GENERAL HOSPITAL

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Background: Hip fractures are a major cause of disability and mortality in the elderly. The care process, both within and after discharge from hospital, affects clinical outcomes. This study aims to identify current practices, and care gaps for elderly patients admitted to the Montreal General Hospital, following a hip fracture Methods: 408 persons 65 years and older were admitted after a hip fracture between 2006- 2008 and 78 charts were randomly selected for review. A modified version of Veterans Affairs Stroke Unit Acute Care chart review was used to extract data Results: Of the 78 patients, 66 were admitted from the community (mean age 83 years, 79% women); 12 were from long-term care(LTC) (mean age 86 years, 50% women). For the community sample (LTC sample), 22% (LTC 50%) had surgery ≥4 days from emergency; mean length of stay was 23 days (LTC 12 days); in hospital mortality was 11% (LTC 8%). Pre-fracture, 30% of the community sample and 50% from LTC were using a walker. At discharge, 88% of the community sample were able to walk <30 m on average; 50% of the LTC sample could walk, but the distance was rarely recorded. At discharge 50% of the community sample (91% of the LTC) were dependent for self-care and mobility (Barthel Index <60) In-hospital care included internal medicine (94 % community 100% LTC) and physiotherapy (97% community 92% LTC), social work (76 % community 58% LTC), geriatrics (50% community 17% LTC), and nutrition services (24% community 8% LTC). 56% of the community sample had a bone mineral density measurement during admission (LTC 67%), 36% received calcium, 39% vitamin D, and 24% received anti-osteoporosis medication, (LTC: 42%, 42%, and 17 % respectively). 50%of the community sample had a follow-up surgical visit by 6 weeks, and 21% had no documented follow-up over 1 year after discharge (LTC:72% and 9%) Conclusions: Despite the availability of clinical guidelines for optimal care following hip fractures, important care gaps remain. The multidisciplinary care is still fragmented during the hospital setting and after discharge. The health care professionals in the front line of hip fracture care must not miss opportunities to manage these key aspects of care.

O8

NUTRITIONAL STATUS IN AN ELDERLY POPULATION WITH TYPE 2 DIABETES

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Little is known about the adequacy of nutrient intake among elderly people with type 2 diabetes. We addressed this issue using a longitudinal cohort data collected in Montreal, Canada. We analyzed a subset of data wherein 80 participants ≥ 65 years old (46% women, 54% men) from university-affiliated diabetes clinics underwent several assessments over one year. Dietary data were collected using a self administered Food Frequency Questionnaire (FFQ, one month recall period). Using the Estimated Average Requirement (EAR) cut point method, prevalence of inadequate intake of vitamins was computed. A high percentage of both men and women consumed less than the recommended servings of dairy products (men, 93%; women, 65%) and fruits and vegetables (men, 88%; women, 68%). However, the intake of meat and alternatives was higher than recommended in the majority of men (86%) and women (65%). Prevalence of inadequate dietary intake was very high for vitamin E (95%) and folate (76%). In addition, more than 30% of the subjects had intakes less than the EAR for vitamins A, C and thiamine, while only 1% had inadequate intake of niacin. Results indicate that a high proportion of elderly with diabetes do not consume recommended levels of several nutrients from food sources. Given the

importance of medical nutrition therapy in diabetes, research should address the strategies to improve food habits in this population.

O9

CORTISOL INCREASES IN MILD COGNITIVE IMPAIRMENT OCCUR ONLY IN INDIVIDUALS WHO PROGRESS TO DEMENTIA

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Patients with Alzheimer's disease (AD) secrete more cortisol (a stress hormone) than normal elderly (NE). Recently it has been shown that individuals with Mild Cognitive Impairment (MCI), who are at increased risk for progression to AD, also have higher levels of cortisol than NE. However, it is not clear if this is due to disease progression or to other factors, such as passage of time or age. Therefore, the goal of our study was to verify that cortisol secretion is stable in NE but increases over time in MCI, especially those who progress to AD. Salivary cortisol samples were collected one day at baseline and two years later at follow-up in 61 MCIs and 30 ADs recruited from the Jewish General Hospital (JGH) memory clinic, and in 34 NEs recruited from the JGH family medicine clinic and newspapers. MCIs were followed annually and classified as either progressors (MCIp) or non-progressors (MCInp). Paired t-tests were performed. Twenty-one NE, 18 MCInp, 4 MCIp, and 11 A D completed the study. They did not differ from the initial cohort on demographical variables (all $p>0.05$), but more MCIp were lost to attrition ($p<0.05$). AD included in our study were older ($p=0.03$). Cortisol levels of NE, MCInp, and AD were statistically stable from baseline to follow-up (all $p>0.05$), whereas the cortisol levels of MCIp showed a statistically significant increase ($t = -4.14$, $df=3$, $p=0.03$). These results suggest that passage of time (or age) is not a factor in cortisol increases. Our results suggest that increasing cortisol may reflect disease progression, or accompanying stress related to worsening memory loss.

O10

GALLSTONE DISEASE IN THE ELDERLY: ARE OLDER PATIENTS MANAGED DIFFERENTLY?

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Introduction: The purpose of this study is to describe the differences in the management of symptomatic gallstone disease, within different elderly age groups, and to evaluate the association between older age and surgical treatment. METHODS: This is a single institution retrospective chart review of all patients ≥65 years old with an initial hospital visit for symptomatic gallstone disease, between 2004 and 2008. Patients were stratified in three age groups (Group1: 65-74 years, Group 2: 75-84 years, Group: 3 ≥85 years). Patient characteristics and presentation at the initial hospital visit were described, as well as the surgical and other non-operative interventions occurring over a 1-year follow-up. Logistic regression was performed to assess the effect of age on surgery. RESULTS: 397 patient charts were assessed (Group 1, n=182; Group 2, n=160; Group 3, n=55). Cholecystitis was the most common diagnosis for Groups 1 and 2 while cholangitis was most common for Group 3. Elective admissions to a surgical ward were most common in Group 1, as opposed to urgent admissions to a medical ward in Group 3. Elective surgery was performed at first visit in 50.6%, 25.6%, and 12.7%, with a 1-year cumulative incidence of surgery of 87.4%, 63.5%, and 22.1% in Groups 1 to 3, respectively. Inversely, cholecystostomy and ERCP were used more often in the older age groups. Increased age (OR=0.87, CI=[0.84-0.91]) and CCI (HR=0.80, CI=[0.69-0.94]) were significantly associated with a decreased probability of undergoing surgery within 1 year following initial visit. CONCLUSION: Even within the elderly population, older patients presented more frequently with severe disease and underwent more conservative treatment strategies. Older age was independently associated with a lower likelihood of surgery.

Notes