Vascular elements in cognitive decline: Large effects of small lesions

Gold, Gabriel; Kovari, Eniko Veronika; Herrmann, François; Forster, Alexandre; Giannakopoulos, Panteleimon; Bouras, Constantin

Methods.– In a retrospective cohort study, we merged chart and administrative data of unique seniors aged 65 years and older admitted for pneumonia at three acute care hospitals over one year. We constructed a Frailty Index (range: 0 to 1) from the number of deficits out of 16 items that spanned comorbidity, functional and social domains. Logistic regression modelling was performed to quantify the association of this index with 30-day mortality, after adjustment for demographic characteristics, severity of acute illness, and recent hospitalization.
Results.– Among 2,379 seniors hospitalized for pneumonia, 30-day mortality was 24.8%. Their median (inter-quartile range) Frailty Index was 0.38 (0.31 to 0.44). The Frailty Index was significantly associated with 30-day mortality (odds ratio 1.28, 95% confidence interval 1.17 to 1.41, for every increase of 0.1 in the index) after adjustment for the pre-specified potential confounders.
Conclusion.– The Frailty Index was an independent predictor of 30-day mortality among seniors hospitalized for pneumonia. If this finding can be replicated for other medical diagnoses, then the utility of such an index may extend beyond identifying long-term mortality risk, to include prediction of seniors' short-term mortality risk with episodes of acute illness requiring hospitalization.
Disclosure.– No significant relationships.

http://dx.doi.org/10.1016/j.eurger.2012.07.408

O045

Onset of cognitive decline: A lifecourse approach

A. Singh Manoux

The presentation makes the argument for a lifecourse approach to studying cognitive ageing. Much research in this domain is on dementia, the 2009 World Alzheimer Report estimates 36 million cases of dementia in 2010 and projects that this number will double every 20 years, with most of the increase coming from low-income countries. The dementia epidemic requires strategic choices in setting research priorities to allow rapid translation into prevention, delaying the age of onset and improving clinical care. There is now quite a lot of evidence to suggest that dementia develops over many years, perhaps as long as 20–30 years. Thus, the longitudinal process of age-related changes in cognitive function is an important outcome of interest. Furthermore, proposed changes to the DSM-5 highlight the importance of both "major" and "minor" neurocognitive disorder. In order to meet these challenges, we recommend adoption of an extended time window to study cognitive ageing and identify the risk factors associated with adverse cognitive outcomes. A shift away from binary outcomes such as dementia assessed at one point in time in elderly populations to research on cognitive ageing using repeated measures of cognitive function and starting earlier in the lifecourse would allow the sources of variability in cognitive ageing to be better understood. This approach also ensures that the risk factors are assessed prior to the beginning of the dementia process. There might be critical periods (childhood, adolescence, early adulthood, midlife, etc.) of exposure that late life measures of risk factors cannot assess.

http://dx.doi.org/10.1016/j.eurger.2012.07.409

O046

Vascular elements in cognitive decline: Large effects of small lesions

G. Gold , E. Kövari , F. Herrmann , A. Forster , P. Giannakopoulos , C. Bouras
Department of Internal Medicine, Rehabilitation and Geriatrics and Department of Psychiatry, Geneva Medical School and Geneva University Hospitals, Geneva, Switzerland

Introduction.– Vascular lesions are particularly common in the aged brain. These include large macro-infarcts but also microscopic lesions. In fact, community based autopsy series have indicated that small ischemic lesions are present in over 70% of the brains of older individuals both with and without dementia.
Methods.– To identify the morphological characteristics of small ischemic cerebrovascular lesions most closely associated with cognitive decline, we conducted several clinicopathological studies in old populations. We also explored the relationship between vascular substrates of cognitive impairment and the presence of vascular risk factors and other vascular disease.
Results.– In older individuals with only minimal Alzheimer (AD) neurofibrillary tangle pathology, cortical microinfarcts were the strongest correlate of cognitive status followed by basal ganglia and thalamic lacunes. An analysis of 156 older individuals with variable degrees of AD pathology confirmed cortical microinfarcts were the strongest vascular correlate of dementia, in both pure and mixed cases. Finally, in a study of 93 nonagenarians and centenarians with mixed pathology, cortical microinfarcts proved to be the only vascular correlate of dementia. In this very old population, threshold scores for neurofibrillary tangle pathology and cortical microinfarcts yielded a correct classification rate for dementia of 0.84 (sensitivity 0.82; specificity 0.91). Lacunes were more common in hypertensive cases but microinfarcts were not significantly related to vascular risk factors or other ischemic pathology.
Conclusion.– Cortical microinfarcts are a major determinant of cognitive function in aging individuals and may represent an important target for future preventive and therapeutic interventions in vascular and mixed dementia.

http://dx.doi.org/10.1016/j.eurger.2012.07.410

O047

From the emergency ward to the surgery room

S. Maggi , M. Saugo
CNR Aging Branch-Institute of Neuroscience, SER, Padova, Italy

Hip fracture is one of the most important causes of death and disability among older people. In spite of the increasing interest at international level, due to the clinical and functional sequelae, in some regions only limited epidemiological data are available about the incidence and the profile of care of hip fractures. Primary aim of the study presented was to review the international accepted criteria for the profile of care of hip fracture. The secondary objectives were to ascertain the profile of hospital care for hip fractures in different geographic areas of the Veneto Region, in Italy. The same general approach to data collection was used in all areas. Patients with pathological fractures were excluded from the study, as well as multiple hospital discharges for the same event. The frequency of hip fractures ranges from 65–75/10.000 individuals aged 65+. The accuracy of neck of femur fractures using ICD9 codes is high, and the coding mistakes irrelevant. The profile of care present a high variability among the different geographic areas, in particular, in 2008 the timing of surgery after hospital admission varied from 2.2 ± 2.4 days to 6.2 ± 4.0 days in different areas (mean $\pm$ standard deviation) and the percentage of patients undergoing surgery within 48 hours varies from 15% to about 90% in different areas. These results suggest the need for creating a registry for hip fractures to collect data from different areas and to build the basis for standardized care for these patients.

http://dx.doi.org/10.1016/j.eurger.2012.07.411

O048

Fracture liaison service: Which model?

R. Rizzoli*, T. Chevalley*
Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, 1211 Geneva 14, Switzerland
*Corresponding authors.

The goal of osteoporosis prevention and treatment is to reduce low energy fracture risk. The crucial issue is to identify subjects