Communications to the Autumn Meeting of the British Geriatrics Society

22 - 23 November 2007
Harrogate International Centre
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programme of abstracts
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AN INTERNATIONAL MULTICENTER RANDOMIZED COMPARISON OF BALLOON KYPHOPLASTY AND NON-SURGICAL MANAGEMENT IN PATIENTS WITH ACUTE VERTEBRAL BODY COMPRESSION FRACTURES

D Wardlaw1, J Van Meirhaeghe2, L Bastian3, S Boonen4
1. Woodend Hospital, Aberdeen, United Kingdom, 2. Algemeen Ziekenhuis St Jan, Brugge, Belgium, 3. Klinikum Leverkusen, Germany, 4. Leuven University Center for Metabolic Bone Diseases and Division of Geriatric Medicine, Katholieke Universiteit Leuven, Leuven, Belgium

Introduction
Balloon kyphoplasty (BKP) is a minimally invasive procedure for treatment of osteoporotic and cancer-related Vertebral Compression Fractures (VCF). The randomized, controlled Fracture Reduction Evaluation (FREE) trial was initiated to compare effectiveness and safety of BKP to non-surgical management (NSM) for treatment of acute painful VCFs. We describe the primary endpoint of the ongoing 2-year study.

Methods
300 patients with 1-3 non-traumatic VCFs (?3 months old) were randomly assigned to either BKP or NSM. The primary endpoint, change in QOL as measured by SF-36 Physical-Component-Summary (PCS) at one month, and device/procedure-related safety were analyzed in the intent-to-treat population. Secondary endpoints were analyzed in a per-protocol-population and included SF-36 subscales, EQ-5D, self-reported back pain and function using the Roland Morris Disability Questionnaire (RMDQ). All patients were referred for appropriate osteoporosis medical therapy.

Results
Mean patient age was 73 years, 77% were female. 97% had VCFs due to primary osteoporosis. For PCS, the difference in change at one month follow-up was 5.73p in favor of BKP over NSM (p<0.0001). All physical component SF-36 subscales, total EQ-5D score, back pain function were significantly improved for BKP compared to NSM (p<0.0001). There was one device-related (soft tissue hematoma) and no bone cement-related serious adverse events.

Discussion
Compared to NSM, BKP demonstrated superior short-term pain, function and quality of life outcomes with comparable safety profile for treatment of acute, painful VCF.

THE DEVELOPMENTAL ORIGINS OF SARCOPENIA: UTILISING PERIPHERAL QUANTITATIVE COMPUTED TOMOGRAPHY (PQCT) TO ASSESS MUSCLE SIZE IN OLDER PEOPLE

A Aihie Sayer1,2, E M Dennison1, H E Syddall1, K A Jameson1, H J Martin1, C Cooper1
1 MRC Epidemiology Resource Centre, 2 University Geriatric Medicine, University of Southampton

Introduction
A number of studies have shown strong graded positive relationships between size at birth and muscle strength in older people. Body composition studies suggest similar associations between size at birth and indirect measures of muscle mass but no studies to date have included direct measures of muscle size. We utilised pQCT to address the hypothesis that low birth weight was associated with smaller muscle size in older people.

Methods
We studied 313 men and 318 women born in Hertfordshire UK between 1931 and 1939 who were still resident there and had historical records of birth weight. Lifestyle information was collected by questionnaire and participants underwent pQCT examination of forearm and calf muscle area.

Results
Birth weight was positively related to forearm muscle area in men (r=0.24, p<0.0001) and women (r=0.17, p=0.003). These associations were robust to adjustment for age, height, walking speed, social class, smoking and alcohol consumption in men but not women. Calf muscle area was related to birth weight in men (r=0.13, p=0.03) and women (r=0.17, p=0.004) but adjustment removed these associations.

Conclusion
We present first evidence that directly measured muscle size in older men and women is associated with size at birth. The cellular and molecular mechanisms underlying this relationship need to be explored.
THE EFFECTS OF INTRAMUSCULAR VITAMIN D ON SERUM VITAMIN D LEVELS IN OLDER PATIENTS

C Nugent1, S Wilson1, K Roche1, M Fitzgibbon2, D Griffin2, N NiChadhin2, E Mulkerrin1

1. Department of Medicine for the Elderly, University College Hospital, Galway, Ireland  2. Department of Clinical Biochemistry, University College Hospital, Galway, Ireland

Introduction
Many studies have demonstrated the high prevalence of Vitamin D (25[OH]D) insufficiency (<50nmol/l) in older patients. DeLappe et al (Eur J Clin Nutr. 2006; 60(8):1009-15) found that 25(OH)D levels failed to reach normality in 35% of older patients despite oral supplementation. We assessed the effects of intramuscular vitamin D on 25(OH)D levels in a similar population.

Methods
Ninety female inpatients aged >65 were randomly assigned to receive 300000 IU of intramuscular Vitamin D3 (n=72, age range 65-101, mean 79) or no intervention (n=18, age range 65-87, mean 76). Baseline renal and liver profile, 25(OH)D and parathyroid hormone levels were taken and repeated 3 months after recruitment.

Results
Baseline 25(OH)D levels were insufficient in 87.7% of all patients. Patients who received treatment showed a significant improvement in 25(OH)D levels, from 25.5 ±16 to 81 ± 25 nmol/L. (p <0.0001, paired T-test) with only 11% remaining deficient. Serum 25(OH)D levels in the control group also increased (27±15 to 37±22, p=0.006), but 66% were still deficient at 3 months. Plasma levels of iPTH fell significantly from 80.8 ± 84.2 to 51.2 ± 39.8 ( p=0.001, paired T-test) in the treatment group alone.

Conclusion
Previous studies have shown that oral supplementation with Ca/Vitamin D often fails to normalise Vitamin D levels. Our study shows that intramuscular Vitamin D normalises levels in 89% of such patients and may represent a practical alternative.

ASSOCIATION BETWEEN VITAMIN D RECEPTOR (VDR) GENE, BALANCE AND FALLS: THE OPUS STUDY

A Stewart1, RJ Barr1, A Rogers2, R Eastell2, D Felsenberg3, CC Glüer4, C Roux5, D M Reid1


Introduction
Associations have been shown previously between VDR genes, osteoporosis, muscle force and fractures. We have previously shown associations between VDR polymorphisms and falls in early postmenopausal women. We wished to confirm our findings in a different population and to identify if balance/leg force is also associated with VDR.

Methods
We studied 2837 women (55-80 years) from the Osteoporosis and Ultrasound (OPUS) study, a random cohort from 5 European centres. Blood samples were collected for genotype analysis (single nucleotide polymorphism Bsm1; n=1970)). In addition a falls questionnaire, a balance test (walk-along-5-metre-line), a muscle force test (a variation of the chair-rising-test) and, in a sub-set (n=578), leg force measurements were completed.

Results
We observed significant associations between VDR and reported falls in the past year (OR (95%CI); bb=0.60 (0.45-0.80), Bb=0.70 (0.53-0.92), BB=reference, p<0.001 (age, height, weight adjusted)), ease of rising from chair (% “easy”; bb 82.3%, Bb 77.6%, BB 75.7%, p = 0.023), walk-along-5-metre-line test (Mean (SD): bb/Bb 4.6m (1.2) vs. BB 4.4m (1.3); p = 0.033) and leg force measurements (Mean PowerMax (SD); bb 0.51 kW (0.18), Bb 0.47 kW (0.16), BB 0.45 kW (0.14), p=0.008).

Conclusions
We found an association between VDR and muscle/falls, however the mechanism for the association is not clear although analysis of data on vitamin D levels and prospective falls data may help determine the mechanism of this gene/environment interaction.
A RANDOMISED CONTROLLED TRIAL ON THE EFFECTS OF WHOLE BODY VIBRATION ON MUSCLE POWER IN OLDER PEOPLE AT RISK OF FALLING

H Corrie1, O D’Souza, K Brooke-Wavell2, N Mansfield2, V Griffiths, R Morris, A Attenborough, T Masud3

Nottingham University Hospitals NHS Trust, 1. Loughborough University and Nottingham University Hospitals NHS Trust 2. Loughborough University, 3. Nottingham University Hospitals NHS Trust and University of Derby

Introduction
Research suggests that whole body vibration is beneficial to muscular performance in various populations including institutionalised older people. The aim of this randomised controlled trial was to determine if adding WBV to a standard falls prevention programme can improve muscle power in community dwelling older people at risk of falls.

Methods
61 participants attending a falls prevention programme were randomised to Vertical-WBV, Tilting-WBV or Placebo (vibrating noise) groups. The baseline characteristics between the three groups in terms of age, sex and power were similar. Sessions occurred three days/week for 12 weeks and leg extensor muscle power was measured in Watts (W) at baseline and post intervention.

Results
Preliminary data were available for 49 subjects (Vertical-WBV n=17, Tilt-WBV n=16, placebo n=16). ITT analysis showed the mean differences between pre- and post-intervention (95%CI) in leg power in the placebo was +2.0W (-3.6 to +7.6); Tilt-WBV +8.8W (+1.7 to +15.9); and Vertical-WBV +18.9 (+1.7 to +30.3). Between group differences (ANOVA; Bonferroni) showed that Vertical-WBV increased power significantly more than placebo (p=0.014). The mean difference between pre- and post-intervention in the combined-WBV (Tilt+Vertical) +14.0W (+7.3 to +20.7) was significantly greater than the placebo (p=0.006).

Conclusions
These data suggest that the addition of whole body vibration to a falls prevention programme improved leg extensor muscle power in community dwelling older patients at risk of falling compared to the falls prevention programme alone.

BONE METABOLISM AND KIDNEY DISEASE IN A UK RESIDENTIAL HOME POPULATION

S E O’Riordan1, J L Carter2, G L Eaglestone3, M P Delaney3 and E J Lamb2

Departments of 1. Health Care of the Older Person, 2. Clinical Biochemistry and 3. Renal Medicine, East Kent Hospitals NHS Trust, Canterbury, Kent

Introduction
Osteoporotic fracture risk increases in older people and this is more common in residential homes. Secondary hyperparathyroidism, driven by vitamin D deficiency and decreased calcium intake, may be contributory but is also common amongst patients with chronic kidney disease (CKD). We assessed the relationship between markers of bone metabolism and severity of CKD in a residential home population.

Methods
Older subjects (n=250) were recruited over a nine-month period from 155 residential care homes in East Kent: 17.6% had glomerular filtration rate (GFR mL/min/1.73 m2) of >60, 39.2% stage 3a CKD (GFR 45-59), 33.6% stage 3b CKD (GFR 30-44) and 9.6% had stage 4 CKD (GFR 15-29). After exclusion of patients with primary hyperparathyroidism (n=8), thyrotoxicosis (n=1) and those receiving calcium/vitamin D supplementation (n= 56), plasma parathyroid hormone (PTH), serum vitamin D metabolites, calcium and phosphate were measured.

Results
PTH concentrations increased with declining GFR (p<0.0001), particularly as GFR fell below 45. Nearly all patients (92%) had vitamin D deficiency or insufficiency which was unaffected by kidney function (p>0.05). Concentrations of 1,25-dihydroxyvitamin D declined with renal function (p<0.0003) but was also prevalent at all stages of kidney disease.

Conclusion
Vitamin D deficiency, 1,25-dihydroxyvitamin D deficiency and secondary hyperparathyroidism are common in the residential home population. Standard 25-hydroxyvitamin D replacement may be ineffective in patients with CKD stage 3b or worse, a high percentage (43%) of this population.
A M Yohannes¹, R C Baldwin², M J Connolly³

¹ Department of Physiotherapy, Manchester Metropolitan University; ² Manchester Royal Infirmary, University of Manchester; ³ Freemasons’ Department of Geriatric Medicine, University of Auckland, New Zealand

Introduction
In England in the past five years increasing numbers of older people, often after receiving treatment for acute conditions, are being referred for rehabilitation in intermediate care (IC) settings, with the aims of improving hospital to home transition and reducing avoidable hospital readmission. We hypothesized depression is common in IC and adversely affects length of stay (LOS).

Methods
173 patients (113 female), ≥60 years consecutively admitted to IC for rehabilitation, usually after acute care admission. Physical disability was assessed using Nottingham Extended Activities of Daily Living Scale (NEADL), cognition using Mini Mental State Examination (MMSE) and severity of depression using Montgomery Asberg Depression Rating Scale (MADRS). Patients with MMSE < 23 were excluded.

Results
Mean (SD; range) was 80 (8; 60-97) years. Mean (SD) LOS in the unit was 26 (17) days. 29 (17%) had clinical depression. On regression analysis LOS (outcome variable) was predicted by NEADL (p = 0.03), MMSE (p < 0.001), living alone (p = 0.04) and MADRS (p = 0.01). 3% of the variance was accounted for by NEADL, 3% by living alone, 5% by MMSE and 12% by MADRS (Total R² = 0.24).

Conclusions
Depression is common in IC. LOS in IC was associated with physical disability, living alone, cognitive impairment and severity of depression. The effects of structured depression management programmes for older patients admitted to IC are worthy of study.

T C Lee¹, J C Milton¹, D Cooper², S H D Jackson¹

¹ Department of Clinical Gerontology, Kings College Hospital, London. ² Department of Statistics, King's College, London

Introduction
Head-up tilt and carotid sinus massage (CSM) are often indicated in the investigation of syncope and falls in older adults. At our centre we prospectively record all patient details onto a database. We questioned whether there was a relationship between the investigating doctor (operator) and tilt test results.

Methods
We interrogated our prospective database of all tilt table and CSM results at a tertiary referral centre over 11 years. Recorded diagnosis, operator, source of referral (different sources within our centre and in other centres), patient age and gender and were examined.

Results
1717 tests were performed over this period. 1532 patients underwent CSM. 7 operators performed more than 50 tests. Between operators, the rate of diagnosis of carotid sinus syndrome (CSS) ranged from 5.7% to 14.5% and the rate of diagnosis of symptomatic orthostatic hypotension (SOH) ranged from 2.8% to 17%. Those operators who diagnosed CSS frequently also diagnosed SOH frequently. The differences between diagnostic rates were significant (P<0.001). The prevalence of positive results was higher for male patients (odds ratio 1.2 for SOH and 2 for CSS) and older patients and for referrals from other centres (odds ratio 1.5 for CSS) but adjusting for these variables did not remove the inter-operator differences.

Conclusions
The operator influences the rate of diagnosis of both CSS and SOH, which appears likely due to test interpretation.
POSTER PRESENTATIONS

Clinical Effectiveness  ABSTRACT BOOK NOS  9-33
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Introduction
The government is committed to halving MRSA bacteraemia by 2008 (Going further faster DOH, May 2006). Improving hand cleaning through a combination of alcohol gels and hospital culture change is proven to reduce MRSA transmission and nosocomial infections (Johnson et al, MJA, November 2205, Pittet et al, The Lancet 2000).

In Medicine for Older People we are changing the culture of hand cleaning through auditing, increasing awareness, and participating in The National Patient Safety Agency cleanyourhands campaign.

Methods
From March 2003 to December 2006 we audited 1250 patient contacts (25 data sets each comprising 50 contacts) from acute and rehabilitation wards, observing hand cleaning rates. Results were fed back to each ward and the division, outlining hand cleaning rates and common circumstances causing lapses. The cleanyourhands campaign (launched February 2005) includes posters, use of hand gels, and patient involvement, also improving awareness of the importance of hand cleaning.

Results
In the first year average hand cleaning rates were 62% (44% to 75%), improving to 68% in 2004 (50%-76%), 81% in 2005 (68%-92%), and 76% in 2006 (56% –86%).

Conclusions
Overall there has been initial improvement in hand cleaning, but it has not continued above about 80% compliance. New strategies need to be found to augment the effect of existing audit activity.

Introduction
Hospital associated infections (HAI) are an important cause of morbidity and mortality in older adults. Knowledge regarding hand hygiene practices is vital in combating HAI. Although alcohol gel is effective against Methicillin Resistant Staphylococcus aureus (MRSA) it is insufficient to remove Clostridium difficile spores, which require soap and water. The aim of this audit was to assess if staff in an Elderly Care Department were aware of this.

Methods
An anonymous questionnaire was used to survey staff, representing all members of the multidisciplinary team. Questions addressed training and knowledge of minimum hand hygiene procedures.

Results were disseminated to each ward with information packs and posters. Two weeks later the questionnaire was repeated.

Results
Furthermore sub-analysis showed none of the doctors in Cycle1 had received any formal training in hand hygiene.

Conclusions
Many staff are poorly trained in hand hygiene and are unaware of the differences in procedure following contact with MRSA and C. difficile. Simple educational interventions can improve knowledge of correct procedures and should help reduce HAI.
L Histon, M Patel, G Rao
Directorates of Microbiology and Elderly Medicine University Hospital Lewisham, Lewisham

Introduction
The incidence of healthcare acquired infections (HCAI) including MRSA, Clostridium difficile and ESBL have exponentially increased over the last few years. Minimising use of broad-spectrum antibiotics could help to curb this rising trend.

Methods
Novel antibiotic guidelines were introduced whereby all cephalosporins, quinolones amoxicillin, coamoxiclav and clindamicin were avoided for chest, urinary (uti) or surgical infections. Penicillin, clarithromycin, doxycycline, vancomycin and gentamicin were advised instead. Data was collected on the incidence of HCAI occurring before and after introduction of these guidelines.

Results
Eighty days before the guidelines were introduced, 380 patients were admitted with UTI or chest infections (Group A); 80 days post-introduction, 247 patients were admitted (Group B). 19 patients died in Group A; 9 in Group B (OR 0.49, p=0.004). Mean length of stay for Group A was 11 days; 7.5 days in Group B (OR 1.08, p=ns). Number of patients with HCAI pre vs post guidelines were MRSA: 60 vs 38; Clostridium 77 vs 28; ESBL 39 vs 22.

Conclusion
This survey shows that judicious use of common-used broad spectrum antibiotics in patients with chest or urinary tract infections can result in significant reductions in HCAI infections without increasing the mortality rates and length of hospital stay in these patients.

P C Loh, S Das, N Steel
Hull Royal Infirmary

Introduction
Intravenous (IV) antibiotics use is common in the elderly patients in acute wards. An audit of the IV antibiotics usage in the DME wards in Hull Royal Infirmary was done in October 2005. Following this, recommendations on the investigations and the appropriate use of IV antibiotics were disseminated. A repeat audit was performed in October 2006.

Methods
We performed retrospective case-note reviews of the patients who were discharged from the DME wards, of whom discharged letters were typed in October 2005 and in October 2006. Medical notes were checked for the use of oral and/or IV antibiotics and their indications, investigations performed and the appropriateness of the IV antibiotics use.

Results
The audit results for October 2005 are presented in parenthesis.

1. Total number of patients in each audit 108 (72).
2. Mean age of patients 83.3 (85.8) years.
3. Proportion of patients on oral antibiotics only 34/108 (15/72).
4. Proportion of patients on IV antibiotics 20/108 (22/72).
5. Of those patients given IV antibiotics, 15/20 (14/22) had blood cultures taken, 10/20 (7/22) had urine specimens sent for microscopy, 16/20 (18/22) had chest x-ray, 0/20 (3/22) had sputum culture sent.
6. The use of IV antibiotics was appropriate in 16/20 (16/22).

Conclusion
The proportion of patients given IV antibiotics had reduced since the recommendations were disseminated. However, there was only minimal improvement in the proportion of patients receiving IV antibiotics appropriately.
INTRODUCING A CLINIC IMPROVES QUALITY OF CARE FOR PARKINSON'S DISEASE PATIENTS

R Lisk¹, Y Liang², K Debrah²

1. St. George's Hospital, London 2. Department of Geriatric Medicine, Frimley Park Hospital, Frimley, Surrey

Background
An audit (Lisk & Debrah, poster BGS autumn 2005) against previous guidelines (Bhatia et al, Hospital Medicine 2001; 456-470) showed that Parkinson’s disease (PD) patients were not having their multidisciplinary needs met. Following this audit, a PD clinic was started by a geriatrician in addition to the PD clinic run by the neurologist, in order to meet these patients multidisciplinary needs in a district general hospital.

Innovation
Current practice was audited via questionnaires and interviews in accordance with the NICE guidelines issued June 2006. Similar proportions of patients as in the previous audit from in-patients, out-patients and the day hospital were audited.

Evaluation
35 patients, 21 males, aged 59 – 89 years; the table below shows the percentage of patients seen by the following disciplines in the last 12 months and other aspects of PD care.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movement Disorder specialist</td>
<td>92%</td>
<td>92%</td>
</tr>
<tr>
<td>Nurse specialist</td>
<td>79%</td>
<td>83%</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>71%</td>
<td>77%</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>65%</td>
<td>66%</td>
</tr>
<tr>
<td>Speech therapist</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>4 out of 5 multidisciplinary team</td>
<td>39%</td>
<td>57%</td>
</tr>
<tr>
<td>Driving warnings</td>
<td>56%</td>
<td>70%</td>
</tr>
<tr>
<td>PD medications started by specialist</td>
<td>64%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Conclusions
The multidisciplinary clinic resulted in the improvement in assessment of PD patients. 57% of patients as opposed to 39% were seen by 4 of the multidisciplinary team. Lack of resources means speech therapy remains a problem. NICE guidelines should ensure that patients have access to appropriate health and social care professionals.

EDUCATION OF ELDERLY PATIENTS IN CORRECT BISPHOSPHONATE ADMINISTRATION

L A Urquhart, A-L Cunnington

Stobhill and Ayr Hospital, West of Scotland

Introduction
Bisphosphonates are widely used in the elderly. Our previous audit revealed 62% of our elderly patients weren’t taking bisphosphonates correctly. We wished to determine if opportunistic education improved patients’ knowledge of the recommended dosing regimen.

Methods
Patient’s prescribed oral bisphosphonates in two Elderly Care units were asked about correct bisphosphonate administration, followed by verbal and written information. A 30 point mini-mental state examination was performed. Patients taking bisphosphonates incorrectly were reassessed pre-discharge.

Results
60 patients (83% female) were assessed. Median age 83yrs. 45(75%) patients were aware of taking bisphosphonates. 20/60(33%) patients were aware of correct dosing regimen. Median MMSE 25. Incorrect dosing was found in 40(67%) patients. Median MMSE 18. The commonest error was 17/60(28%) patients not taking drug 30 minutes prior to other medication. 39/40 patients were reassessed; one died. 18/39(46%) patient’s demonstrated completely correct knowledge post-education. Two further patients improved knowledge. Median MMSE was 24 in these 20 patients. 18/39(46%) patients didn’t improve post-education. Median MMSE was 14.

Conclusion
Incorrect administration was found in two-thirds of patients. Half of these patients improved their knowledge following education. The remainder did not improve and a low MMSE score was a contributing factor. Secondary care provides an ideal opportunity to educate patients in correct bisphosphonate administration and identify those requiring supervision.
**AN AUDIT ON ASSESSMENT OF OSTEOPOROSIS RISK IN PARKINSON'S DISEASE**

R Ramanath, B J Liddle, N F A Peel
Northern General Hospital Sheffield, Department of Care of Elderly Medicine, Metabolic Bone Centre

**Introduction**
Parkinson’s disease (PD) is associated with an increased risk of falls & fractures. It is therefore important to assess osteoporosis risk in PD patients. Our aim was to audit the assessment of fracture risk in PD patients attending the day rehabilitation unit.

**Method**
We performed a retrospective case note audit of 50 PD patients (25 M, 25 F), mean age 72.9 years. Disease duration ranged from 1 to 17 years. Disease severity using Hoehn & Yahr scales ranged between 1 and 4. 16 patients (32%) had a history of prior fracture and 28 (56%) had a history of falls. BMD had been assessed in 37 patients (19 M, 18 F).

**Results**
Mean T score at lumbar spine (LS) was -1.21 and at total hip (TH) -1.13. BMD was normal for age (Z score 104.7% at LS and 100.2% at TH) and did not differ between those patients with fracture and those without fracture. BMD was not predicted by weight or weight loss, disease severity or duration.

13 patients commenced treatment with a bisphosphonate and 21 commenced calcium and vitamin D supplements.

**Conclusion**
This audit shows that fracture risk was assessed in the majority of this population. Although mean BMD was at the expected level for age, assessment resulted in new treatment in a high proportion confirming that consideration of fracture risk is important in the evaluation of PD patients.

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**PROFILING DIETARY CALCIUM INTAKE IN OLDER PATIENTS WITH HIP FRACTURE**

V M Biju, A Gough, A Johansen
University Hospital of Wales, Cardiff

**Introduction**
The 2005 NICE guidelines on Secondary Prevention of Fragility Fracture recommend that patients with an inadequate dietary calcium intake should receive calcium supplements in addition to anti-resorptive treatment. We set out to examine the extent to which this would be necessary among hip fracture patients.

**Methods**
A food frequency questionnaire (FFQ) was administered to consecutive patients admitted with a fragility hip fracture. We also collected demographic data, fracture details, sun-exposure, prior fracture history, risk factors for osteoporosis.

**Results**
18/52(36%) patients were excluded because of significant cognitive impairment, 2 declined to take part. Mean age was 80 years. 23/32 (72%) were female. 56% were house-bound. 12/32 (38%) had previous fractures.

Using a variety of published dietary calcium assessment tools, average intakes were 881mg/day to 938mg/day. In contrast, our comprehensive FFQ suggested a mean intake of 1,083mg/day. Only 5/32 (15.6%) took less than 700mg/day. Six foodstuffs (milk, bread, cheese, yoghurt, ice-cream and chocolate) explained 82.2% of daily calcium intake, the former three making up 72.9%. Milk alone accounted for 50.1% of intake.

**Conclusion**
The average intake of calcium in these hip fracture patients was surprisingly good; exceeding daily recommended intakes. Bread, cheese and ice-cream appear important contributors in these frail older patients. We have used these results to develop a simple dietary tool detailing intake of milk, bread and cheese that could avoid unnecessarily subjecting patients to long-term, costly, unpopular supplementation.
**Problem**
Previous audit showed compliance with NICE technology appraisal on the secondary prevention of osteoporosis in women with fragility fractures was inadequate.

**Design**

**Setting**
Care of the elderly wards and an intermediate care unit in St Helens & Knowsley Hospitals NHS Trust.

**Improvement measures**
Prescription of medication for secondary prevention of osteoporosis. Referral for DEXA scanning in women under 75 years.

**Change strategies**
Presentation of audit to increase awareness amongst geriatricians. Increased geriatric input on the orthopaedic wards.

**Change effects**
In 2006, 25% patients were discharged on bisphosphonates. In 2007, 48% patients were discharged on a bisphosphate or strontium. No patients were prescribed raloxifene or teriparatide in either audit. In 2006, in 68% of patients treatment was potentially indicated, not prescribed and no reason documented in the medical notes. In 2007, this number fell to 6%. In the first audit 3 of the 28 patients should have had a DEXA scan but none were ordered. In the second audit 6 of the 48 patients should have had a DEXA ordered and one was ordered.

**Conclusions**
Improvements in prescribing are evident. Documentation of reasons for non-prescription of treatment have improved. DEXA scanning is still not routinely considered.
F Lally1, I Crome2, M Frisher3, P Crome1

1. Medical School, Keele University, 2. Academic Psychiatry Unit, Keele University, 3. School of Pharmacy, Keele University

Scope
Falls are a significant cause of injury, morbidity and mortality in older people. Recognised risk factors include frailty and prescription medications. The risks associated with alcohol consumption have not been well studied. We reviewed relevant publications to determine if the evidence substantiated a relationship between alcohol consumption and falls in older people.

Search Methods: The review was undertaken between November 2006 and March 2007. We systematically searched the following databases: PubMed, MEDLINE, EMBASE, The Cochrane Database of Systematic reviews and Central Register of Controlled Trials. General internet searches were also made.

Appraisal
The abstracts of 172 potential papers were read to identify those relevant to falls and alcohol in older people. Descriptive studies were excluded; 20 which met inclusion criteria were analysed. Sample size ranged between 75-32,382 in a variety of hospital and community settings throughout Europe and North America.

Results
The majority of studies (15) were cross sectional. Study methodologies varied: 14 self-report, 3 blood alcohol and 3 patient records. There was a positive association in 11 studies of which 5 were statistically significant. 1 study demonstrated a statistically significant negative association while 2 studies reported a non-significant protective effect; there was a possible association in 6.

Conclusions
The differences in methodology, sample size, and settings, make comparisons and definitive conclusions difficult. The apparent trend towards a relationship between falls and alcohol requires further investigation.
AN AUDIT OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) INSERTIONS IN A DISTRICT GENERAL HOSPITAL IN THE UK

N Weerasuriya¹, R Yazdani², J Snape³
1 & 2 Specialist Registrar King’s Mill Hospital, 3. Consultant Geriatrician King’s Mill Hospital

Introduction
Percutaneous endoscopic gastrostomy (PEG) is a widely used method of enteral nutritional support. The National Confidential Enquiry into Perioperative Deaths 2004 (NCEPOD) reported on endoscopic procedures (including PEG) a 1 month mortality of 38%. 19% of procedures were considered futile.

Following the NCEPOD report, all PEG referrals at King’s Mill Hospital (KMH) are scrutinised using criteria identified in the report (particularly chest infections and end stage dementia) as associated with a poor outcome. Other factors reported in the literature as associated with early death are also considered (resuscitation status, any acute illness, low serum albumin and pressure sores).

Method
We identified 40 consecutive patients who had PEG insertions from December 2004 to September 2006. 33 case notes were retrievable. These were compared with the audit of patients at KMH who underwent PEG prior to NCEPOD criteria.

Results

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Age (range)</td>
<td>69.77 (23-95)</td>
<td>65.3 (25-95)</td>
</tr>
<tr>
<td>Gender</td>
<td>65% females</td>
<td>64% female</td>
</tr>
<tr>
<td>Indications for PEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>51%</td>
<td>61%</td>
</tr>
<tr>
<td>Advanced dementia</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>Parkinsonism</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Progressive degenerative neurological disorders</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Frailty</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>5%</td>
<td>12%</td>
</tr>
<tr>
<td>Multiple sclerosis</td>
<td>4%</td>
<td>12%</td>
</tr>
<tr>
<td>Traumatic brain injury</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>DNAR status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Mortality at:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>28%</td>
<td>18%</td>
</tr>
<tr>
<td>3 months</td>
<td>24.6%</td>
<td>18%</td>
</tr>
<tr>
<td>1 month</td>
<td>15.7%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Conclusion
NCEPOD criteria are useful for screening referrals for PEG. Outcome in those rejected needs to be determined to ensure such rejection is ethically acceptable.

CRISIS INTERVENTION OF SUB ACUTE PATIENTS AT DAY HOSPITAL

R Rangasamy, R Pathansali
Clinical Gerontology, King’s College Hospital Denmark Hill London

Background
The BGS compendium document (2006), recommends that all geriatric medical day hospital should provide Crisis intervention and sub-acute assessment.

Innovation
We looked at the outcome of crisis intervention in a community-based Day Hospital. Data collected from Day Hospital notes and Electronic patient records of patients seen for sub acute crisis intervention from 09/01/2003 to 31/12/2006.

Evaluation
A total of 325 patients were seen, 57 (17.5%) patients admitted, 125 (39 %) discharged, 119 (36.6 %) referred to other clinics for follow up. The common reasons for referral were dizziness and falls (23.3%), confusion and failure to cope (18.4%) and pain control (17.5%). There was no significant relation between reasons for referral and the need for admission

Among the 268 patients whose possible admissions were initially prevented, only 32 (12 %) patients were subsequently admitted to hospital in the next one-month from the initial visit. More people were admitted from the group discharged after the first visit as compared to patients followed up in day hospital, (21/125) 16.8% versus (11/119) 9.2%.

Conclusion
Crisis intervention can be effective in preventing possible hospital admission.

We suggest a low threshold for following up patients referred, to monitor the success of intervention to prevent later admissions.
VENOUS THROMBOEMBOLISM PROPHYLAXIS IN ELDERLY MEDICAL INPATIENTS AT RISK- DO WE ADEQUATELY PROTECT OLDER PATIENTS?

P Banerjee, T Chattopadhyay, S Banerjee, M Datta-Chaudhuri, P Fitzsimmons, S Malik
Department of Medicine for Older People Stepping Hill Hospital Stockport NHS Foundation Trust

Introduction
Venous Thromboembolism (VTE) risk rises exponentially with age rising from 1/10,000 <40 years to 1/100 >80 years. Frequency of deep vein thrombosis in an elderly inpatient population is 15.8%. Pulmonary embolism has high mortality in the elderly - 38.9% and is responsible for 25 times more deaths than MRSA infection. Incidence can be reduced by 50% with appropriate use of subcutaneous low molecular weight heparin (LMWH). There is good evidence from MEDINOX and PREVENT trials that 40 mg enoxaparin reduces incidence of VTE from 6.6% to 2.1% in at risk group.

Methods
Retrospective audit of patients over 75 years, randomly selected from medical wards (excluding HDU/ITU). 100 and 60 patients were included in the first and second audit cycle respectively. SIGN and RCP guidelines were used as standard.

Results
In the first audit cycle out of 100 patients audited only 25% (9/36) patients with indications received prophylactic dose of LMWH.

In second audit cycle 86 % of patients (19/22) with indications received prophylactic dose of LMWH. 30 patients did not have any indications and 8 had contraindications for thromboprophylaxis.

Conclusions
Significant improvement in DVT prophylaxis in acutely immobilised older patients was demonstrated as a result of introduction of structured proforma following first audit cycle and educational seminars raising awareness.

CARDIOPULMONARY RESUSCITATION; IMPROVING THE STANDARD OF DOCUMENTATION

S P Hansom, L Bowker, L Rushworth, S Eissa
School of Medicine Health Policy and Practice University Of East Anglia Norwich Norfolk

Problem
Increasing the number and standard of documented resuscitation status decisions

Design
Two phases of audit, one pre and one post introduction of a new style clerking proforma.

Phase 1 reviewed the notes of 152 medicine for the elderly (MFE) inpatients on one day at the Norfolk and Norwich University Hospital (NNUH). Phase 2 reviewed all notes, over a one week period of all deceased patients who had been under the care of MFE physicians (33 patients).

Setting
NNUH.

Improvement measures
The new proforma includes a clearly visible section on its front page regarding resuscitation status. This includes; patient for / not for resuscitation, reasoning, duration and date of the decision, the name, grade, signature and bleep number of the doctor making the decision.

Change strategies
The new proforma contains all the notes of the patient’s admission and is currently used by all medical wards at the NNUH.

Change effects
The number of cases where the resuscitation status was recorded in patient’s notes increased from 28% (42/152) to 100% (33/33). Of those patients with a documented not for resuscitation status the presence of a valid reason increased from 88% (37/42) to 97% (32/33). The signing of the Resuscitation status increased from 98% (41/42) to 100% (33/33)

Conclusions
The introduction of a new style clerking proforma clearly displaying resuscitation status can substantially increase the number of patients with documented resuscitation decisions.
THE REFERRAL PATTERN TO A DISTRICT GENERAL HOSPITAL FAST-TRACK TIA CLINIC - A CLINICAL AUDIT

K Warburton1, C Brown1, M Fail1, B Yip1, BJ Martin1

Department of Medicine for the Elderly, Hairmyres Hospital

Introduction
Following TIA, the 7-day stroke risk is up to 31% for patients with an ABCD (Age, Blood pressure, Clinical features, Duration of symptoms) score of 6 (Rothwell et al. Lancet 2005, 366, 29-36).

This audit assessed use of a faxed referral proforma by GPs to our fast-track TIA clinic. Its aims were to assess if adequate information was given to allow triage using ABCD score and if delay from referral to clinic was reduced using the proforma.

Methods
Casenote review of patients appointed between January and April 2005 (Cycle1) was undertaken. Results were disseminated to GPs and use of an updated proforma encouraged before Cycle2 (January-May 2006).

In Cycle2, ABCD scoring was possible in 96% of referrals using the proforma compared to 20% on standard letters. Faxed proformas reached us immediately compared to 6 days for standard letters. The average time from referral to clinic was also reduced by 6 days.

Conclusion
A faxed referral proforma to a Fast-track TIA clinic reduces delay to clinic, prompts GPs to provide useful information to allow triage and facilitates more appropriate referrals.

This audit is the first step in our aim to triage high-risk patients to allow quicker assessment and management.

CALDICOTT GUIDELINES – WHAT DO PATIENTS WANT?

A Wellman1, A Matthew1, R Miller2, M Gosney3

1 Elderly Care Medicine, Royal Berkshire NHS Foundation Trust, 2 The Business School, University of Reading, 3 Institute of Health Sciences, University of Reading

Introduction
Caldicott Guidelines are designed to protect patients. Their interpretation can, however, be varied. Privacy and dignity, combined with Caldicott Guidelines has resulted in the removal of large amounts of information which used to be visible above a patient's bed. Patient privacy versus patient safety are cited as reasons for very opposing views of what should or should not be visible above the patient's bed.

Method
To determine patients’, relatives’ and staff views regarding the information placed above patient’s bed.

Results

<table>
<thead>
<tr>
<th>Information</th>
<th>Patient (n = 32)</th>
<th>Relative (n = 25)</th>
<th>Staff (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s name</td>
<td>25 (78%)</td>
<td>24 (96%)</td>
<td>16 (59%)</td>
</tr>
<tr>
<td>Consultant’s name</td>
<td>28 (88%)</td>
<td>23 (92%)</td>
<td>18 (67%)</td>
</tr>
<tr>
<td>Senior Nurse name</td>
<td>28 (88%)</td>
<td>22 (88%)</td>
<td>13 (48%)</td>
</tr>
<tr>
<td>Assistance with Personal Care</td>
<td>19 (59%)</td>
<td>21 (84%)</td>
<td>9 (33%)</td>
</tr>
<tr>
<td>Mobility</td>
<td>22 (69%)</td>
<td>19 (76%)</td>
<td>14 (52%)</td>
</tr>
<tr>
<td>Allergies</td>
<td>17 (53%)</td>
<td>21 (84%)</td>
<td>16 (59%)</td>
</tr>
<tr>
<td>Eating regime</td>
<td>17 (53%)</td>
<td>21 (84%)</td>
<td>13 (48%)</td>
</tr>
</tbody>
</table>

Conclusion
The majority of patients wanted their name above the bed but were less keen to have details of their activities of daily living. In addition they did not want a record of any allergy to be visible despite its obvious effect on drug safety.

Family members were the most keen to have the patients name visible with staff the least enthusiastic.

Patients, family and staff views differed and further in-depth work in this area is required.
ARE ATTITUDES TOWARDS OLDER PEOPLE CHANGING WHILE TRAINING IN CLINICAL MEDICINE?

A Roy¹, B Vincent¹, G Scott², M Gosney³

¹ Elderly Care Medicine, Royal Berkshire NHS Foundation Trust, Reading, 2 Royal Liverpool University Hospital, Liverpool. 3 Institute of Health Sciences, University of Reading

Introduction
Medical students have particular prejudices and misconceptions about older people (1) that nursing and psychology students don’t (2).

The aim of this study was to compare the views of first and final year medical students with qualified doctors to determine if attitudes to older people changed.

Method
Subjects taught geriatric medicine through PBL and clinical attachments were asked for five adjectives describing an elderly person. Answers were classified into positive, negative and neutral using Aging Semantic acceptability-unacceptability Differential (ASD)(3). Responses were analysed using first and total words.

Results
First word analysis:

<table>
<thead>
<tr>
<th>ASD</th>
<th>1st year (n = 118)</th>
<th>Final year (n = 139)</th>
<th>FY1 doctors (n = 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>47.5%</td>
<td>40.3%</td>
<td>70.0%</td>
</tr>
<tr>
<td>Positive</td>
<td>43.2%</td>
<td>43.2%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>9.3%</td>
<td>16.5%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Total words analysis:

<table>
<thead>
<tr>
<th>ASD</th>
<th>1st year (n = 595)</th>
<th>Final year (n = 681)</th>
<th>FY1 doctors (n = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>48.4%</td>
<td>53.6%</td>
<td>65.0%</td>
</tr>
<tr>
<td>Positive</td>
<td>40.8%</td>
<td>33.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>10.8%</td>
<td>13.4%</td>
<td>27.0%</td>
</tr>
</tbody>
</table>

Conclusion
• Education about older people did not improve subjects’ attitudes.
• Negative views about older people increased with experience and after qualification.
• Further qualitative research is required to attempt to identify the root causes for this change in perception.

References:

A STUDY OF COMPLAINTS CONCERNING THE HOSPITAL CARE OF ELDERLY PATIENTS AND THE ROLE OF COMPLAINT ANALYSIS AS A QUALITY INDICATOR

A Cracknell, J Sutcliffe, P Belfield

Department of Medicine for the Elderly Leeds Teaching Hospitals NHS Trust

Introduction
The Chief Medical Officer’s report Good Doctors, Safer Patients highlights that complaints should be used as a measure of care quality. They will form an integral part of appraisal and relicensing. This study assessed the nature of complaints within elderly care at 5 hospitals in a large NHS trust and identified areas for performance improvement.

Methods
All complaint files within elderly medicine from April 2005 to March 2006 were analysed using a proforma by a senior nurse and Specialist Registrar.

Results
There were 49 complaints (0.6% of admissions). 96% were made by advocates. 41% concerned deceased patients. 29% arose from the acute admissions units. The predominant issue in each complaint was:
• staff communication/attitude (35%)
• medical/nursing care (31%)
• admission, transfer or discharge arrangements (18%)
• other (16%)

Food, cleanliness and hospital-acquired infection were mentioned in only 14% of complaints.

Data for consultants was presented as a percentage of complaints to inpatient activity, ranging from 0 to 1.1%.

Conclusion
Complaint analysis can be used as a potential quality indicator and areas targeted for performance improvement. We have focused locally on improving care on the acute assessment units and of the terminally ill. Clinical directors should be aware of all complaints in their department to identify potential learning, trends, and ensure discussion in appraisal.

Complaint analysis should form part of clinical governance, promoting a culture of openness and learning.
M Barnes, J Cunliffe, T Smith
St Helens & Knowsley Hospitals NHS Trust

**Background**
There is a wide variation in both the educational preparation of staff working in independent sector care homes, and in their ability to access further education.

Evidence indicates that there are a range of concerns in respect of the level of training and skilled nursing care in homes.

**Innovation**
An evidence based educational package based on skills required to care for an older person and common presentations to Emergency Department from care home residents was developed & delivered to Staff from 9 Homes (404 beds) in St Helens.

The effect of this bespoke educational programme was evaluated using knowledge and skills analysis pre and post intervention.

**Evaluation**
All responses were anonymous.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Very confident/ confident</th>
<th>Would like further training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial</td>
<td>Final</td>
</tr>
<tr>
<td>Falls Management</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>PEG</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Medicines Management</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>Recording of Observations</td>
<td>100</td>
<td>93</td>
</tr>
<tr>
<td>Accessing Specialist Services</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>Continence Assessment</td>
<td>53</td>
<td>50</td>
</tr>
</tbody>
</table>

**Conclusions**
Although confidence fell the desire for further training increased. Movement from stage one to stage two of the "Conscious Competence Learning Model," from unconscious incompetence to conscious incompetence is fundamental in promoting a workforce that optimises the health of the older person living in care homes.

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M P Huntley, K Rosenberg
St James University Hospital, Leeds

**Introduction**
We conducted a retrospective audit to identify the compliance of Abdominal X-ray (AXR) requests with the Royal College of Radiologists (RCR) guidelines, the importance of the AXR on clinical management and methods for reducing inappropriate requests.

**Methods**
We identified 73 patients who had an AXR on admission and used a structured proforma to collect details about their management. Doctors also completed a semi-structured questionnaire to ascertain their awareness and use of the RCR guidelines.

**Results**
30 (41%) requests complied with RCR guidelines and 13 (17.8%) patients had a significant finding on their AXR. Most x-rays resulted in no change in management (50.7%) or treatment for constipation (38.4%). Only 39.7% of patients had a rectal examination. An empty rectum was more likely to be associated with obstruction than soft stool (42.9% vs. 18.2%). All patients with hard stool had constipation only.

31 Doctors completed a questionnaire. Most (93.5%) identified a need for improved radiology training and only 11 (35.5%) where aware of the RCR guidelines. Doctors with less experience selected the highest number of inappropriate AXR requests from a list of differential diagnosis and were more likely to omit an appropriate request.

**Conclusion**
AXR’s are often requested inappropriately and have minimal impact on overall patient management. Improved awareness of radiology guidelines, increased clinical experience and rectal examination may aid the admitting doctor in only referring appropriate patients for an AXR.
**TRENDS AND OUTCOMES OF A GP RAPID RESPONSE OUTREACH TEAM SERVICE**

M Taylor, C Langridge and A-L Cunnington  
*Department of Medicine for the Elderly, Stobhill Hospital, Glasgow*

**Introduction**  
In North Glasgow GPs are now able to refer to the hospital-based GP rapid response (GPRR) service for multidisciplinary assessment and rehabilitation of elderly patients in their own homes thus avoiding hospital admission. They are normally seen within 24 hours. We wished to ascertain the outcomes of patients accepted to the service.

**Method**  
A retrospective case note review was performed over 12 months (January – December 2006). All available information and outcomes were recorded. Patients were scored according to the Rockwood 7 point Clinical Frailty Scale. (RCFS)

**Results**  
59 patients were accepted. 48 (81.3%) of patients had GPRR information available. 35 (72.9%) were female. Mean age was 76 (range 50 – 91). Mean length of inclusion was 14.8 days. The mean RCFS was 4.6. Average Nottingham ADL score on inclusion was 7 and 9 on discharge. Mean Tinetti on inclusion was 15 and 19 on discharge. The average number of medications was 7. 14 (29%) patients were admitted. Their mean RCFS was higher at 5 (non-admitted 4.5). Their inclusion Tinetti was also lower at 10.

**Conclusions**  
Despite the intervention, just under a third of patients still required hospital admission. This study demonstrates that patients included in GPRR are a frail group, but those admitted were frailer on average. The GPRR intervention produced small improvements in performance indicators. This study was limited by incomplete documentation.

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**PHYSICIAN’S ATTIRE: DOES IT MATTER? – THE PATIENTS VIEW**

S Banerjee, Z Alio, J Martin, S Krishnamoorthy  
*Department of Medicine for Older People, Stepping Hill Hospital, Stockport NHS Foundation Trust*

**Introduction**  
There is little research in UK of patient’s opinion on physician’s attire (dress) and whether it influences their confidence and opinion on clinical interaction. We undertook a questionnaire survey of our patients on their views on physicians’ attire.

**Methods**  
The survey was done in out-patient and day-hospital settings. Patients with cognitive or visual impairment and less than 65 years were excluded. Visual aids were used to facilitate responses to the questionnaire with pictures of a doctor in suit, formal dress with tie, casuals, scrubs and white coat. 100 patients were randomly surveyed.

**Results**  
The order of patient’s preference of dress for a Junior doctor in descending order was Formal dress with tie (50%), White coat (25%), Suit (9%), Casual (8%), Scrub (6%), no response (2%).

Patient’s preference of dress for a Consultant in descending order was Suit- 75%, formal (10%), White coat 9%, casual 4%, scrub – 0%, no response- 2%.)

59% of respondents felt that the physician’s attire affected their confidence in doctor, 61% felt it affected how comfortable they felt in talking to a doctor and 55% felt it affected their opinion of medical care.

**Conclusions**  
Our study showed that majority of older patients prefer senior doctors to wear suit and junior doctors formal dress with tie which had an impact on their confidence and how comfortable they felt in their interaction with the doctor.
EFFECT OF STROKE GUIDELINES ON STROKE MORTALITY

P Shibu, V Srinivas, S Subramanian, S H Gupta, P Owusu-Agyei
Peterborough & Stamford NHS Trust, Peterborough

Introduction
We present here the effect of stroke guidelines on improving stroke mortality over a period of 8 years in our hospital.

Methods
Data on all patients aged 18 years and over were collected for the years 1998, 2003 and 2005. The hospital has a 30 bedded stroke unit since 1996 and local stroke guidelines based on national guidelines were first implemented in 1999. We also have developed an integrated stroke care pathway for all patients admitted with stroke. Stroke management and guidelines are a part of regular teaching schedule for medical, nursing and therapy staff. We regularly audit the rate of brain imaging and appropriate use of antithrombotics in stroke.

Results
Total number of stroke patients admitted were 369(1998), 349(2003) and 331(2005). The rate of brain imaging was 66%(243/369) in 1998 and 95%(315/331) in 2005(p<0.05). The appropriate use of aspirin in ischemic stroke was 87%(156/179) in 1998 and 99%(260/262) in 2005(p<0.05). The appropriate prescriptions for anticoagulation for AF in patients with ischemic stroke were 59%(22/37) in 1998 and 77%(24/31) in 2005(p>0.05). The number of patients who died during their admission with stroke was 40%(146/369) in 1998 and 29%(97/331) in 2005(p=0.005).

Conclusions
Our data show that rigorous implementation of stroke guidelines can result in a significant improvement on overall stroke care and reduce stroke mortality.

CALCIUM AND VITAMIN METABOLISM IN OLDER PATIENTS ON RECOMBINANT PARATHYROID HORMONE THERAPY

M C Casey1, M Healy2, B Kennedy1, S Perumal1, N Fallon1, J B Walsh1, T Coughlan1
Mercer’s Institute for Research in Ageing, St. James’s Hospital, Dublin

Introduction
Recombinant PTH (rPTH) is the only anabolic agent available for the treatment of severe osteoporosis in older patients. Anxiety exists amongst some physicians regarding potential side effects of hypercalcaemia/hypercalcuria. We clarify the effect of PTH on bone metabolism in elderly patients.

Methods
Sixty patients who underwent 18 months of rPTH with supplemental calcium and vitamin D had serial 25 (OH) vitamin D and 1, 25(OH)D levels and 24 hour urinary calcium measured.

Results
The mean age was 73±6 years.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>12 months</th>
<th>18 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Se calcium mmol/l</td>
<td>2.35+.01</td>
<td>2.5+.04</td>
<td>2.36+.02</td>
</tr>
<tr>
<td>Urinary Ca mmol/24 Hr</td>
<td>3.75</td>
<td>5.1</td>
<td>4.0</td>
</tr>
<tr>
<td>25(OH)D nmol/l</td>
<td>92±5</td>
<td>46±6**</td>
<td>70±10</td>
</tr>
</tbody>
</table>

*P<0.01, **P<0.001.

1,25 (OH) D concentrations rose significantly by 3/12 (p<0.001) reflecting increased 25(OH) D activation. Pre PTH 5 patients had hypercalcuria this was resolved by reducing vitamin D medications. Within 3/12 of PTH one patient had mild hypercalcaemia, 6 new cases of hypercalcuria were noted – all responded to altering medications. BMD at the lumbar spine had risen by 9.4% and hip BMD changes were similar to those of the Neer study (NEJM; 344(19): 1434-1441, 2001)

Conclusions
PTH therapy had a low risk of side effects due to altered calcium metabolism once high urinary calcium levels were addressed pre treatment. Adequate 25-OHD is necessary to optimise BMD response to PTH.
Background
The effect of social deprivation on health is well recognised. We examined whether the relationships between various social deprivation indices and functional health differ by age and sex.

Methods
In a population-based cross-sectional study in the EPIC-Norfolk, we examined age and sex-specific independent relationships between occupational social class, education and residential deprivation (Townsend Deprivation Index) and functional health measured by the Short-Form 36 (SF-36).

Results
N=19,088 (age= 40-79 years). Residential deprivation was most significantly associated with poor functional health. Regression coefficients (standard error) for mean physical component summary scores of SF-36 were -1.81(0.33,p<0.0001) and -1.10(0.55,p=0.05) for younger (<65) and older men (≥65) and -0.77(0.31,p=0.012) and -1.45(0.52,p=0.005) for younger and older women for higher level of residential deprivation, respectively, after adjusting for social class and education level. Low level of education in younger men and being in low social class in younger women was associated with poorer physical functional health compared to their respective older groups. Social class had a greater effect in older women compared to younger women.

Conclusions
Social deprivation indices have differing impact on functional health depending on the age and sex. Residential area deprivation predicts poor functional health across the population. This may have implications for strategies to promote healthy ageing.
HEART FAILURE IS ONLY PRESENT IN HALF OF GERIATRIC PATIENTS SUSPECTED OF HEART FAILURE

I Oudejans1, A Mosterd2,3,4, M Valk5, E Van Velzen2, J P M Wielders2, A W Hoes3
1. Department of Geriatric Medicine, Elkerliek Hospital, Helmond, 2. Departments of Cardiology, Pulmonary Disease and Clinical Laboratory, Meander Medical Centre, Amersfoort, 3. Julius Centre for Health Sciences and Primary Care, University Medical Centre, Utrecht, 4. Department of Cardiology, Heart Lung Institute, University Medical Centre, Utrecht, 5. Amersfoort, The Netherlands.

Introduction
Diagnosing heart failure (HF) in geriatric patients merely based on symptoms and signs is difficult due to comorbidity. We therefore assessed the prevalence of chronic HF in geriatric outpatients conform the diagnostic criteria of the European Society of Cardiology.

Methods
Patients referred to a geriatric outpatient clinic, who presented with symptoms suggestive of HF (breathlessness and fatigue, either at rest or during exertion, or edema) received a diagnostic work-up including standardized medical history, physical examination, blood tests, chest X-ray, ECG and echocardiography. Presence or absence of HF was established by a panel consisting of a cardiologist, geriatrician, general practitioner and pulmonologist reaching consensus based on the results of all diagnostic information, response to treatment and six months follow-up.

Results
Of 149 patients (mean age 81.6 years, 35% men) 79 (53%) were diagnosed with HF. Fortythree patients (54%) were diagnosed with systolic HF and 31 patients (40%) with HF with preserved left ventricular systolic function. 5 patients (6%) had HF due to other reasons.

Conclusion
In only half of geriatric outpatients suspected of having heart failure, heart failure is present. Additional investigations are needed to adequately diagnose heart failure.

UNDERDETECTION OF PERIPHERAL ARTERIAL DISEASE (PAD) IN THE ELDERLY: A MISSED OPPORTUNITY?

S Ahilathirunayagam1, K Dickinson2, S Homer-Vanniasinkam2, R Fuller3
1 University of Leeds Medical School, 2 Leeds Vascular Institute, Leeds General Infirmary, 3 Medical Department for the Elderly, Leeds General Infirmary

Introduction
PAD is associated with significant morbidity and mortality. Asymptomatic PAD defined as low ankle brachial pressure index (ABPI) without PAD symptoms, is associated with increased risk of Stroke, IHD, poor cognitive function and functional impairment. Early detection of PAD could result in improved management. This is the first UK based study to determine the prevalence of PAD in the elderly.

Methods
ABPI was measured in 100 elderly patients. Their demographic and risk factor profiles were recorded. Patients with abnormal ABPI (<0.9 in non-diabetics and <1.15 in diabetics) were asked about PAD symptoms.

Results
37% had abnormal ABPI: 3% were known to have PAD, in 14% this was a new diagnosis and remaining 20% were asymptomatic. Symptoms were often incorrectly attributed to musculoskeletal pain associated with ageing. The prevalence of asymptomatic PAD was significantly higher in diabetic patients. Only 48% of patients with abnormal ABPI were on BMT (aspirin and statin). 22% of patients were not on any medication.

Conclusion
This study demonstrates that both asymptomatic and symptomatic PAD as elicited by abnormal ABPI (a non-invasive, relatively cheap, easily mastered technique) exists in a significant proportion of elderly patients. Screening for PAD, particularly in diabetics, would detect those patients who could be treated with aggressive BMT in order to minimize the risk of future atherothrombotic events.
**MEDICAL STUDENTS’ ATTITUDE TOWARDS GERIATRIC MEDICINE: THE CULTURAL INFLUENCE ON THE DEVELOPMENT OF GERIATRIC CURRICULUM**

W Muangpaisan1,2, S Intalapaporn1, R Chanda2, D S Fairweather2

1 Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand 2 Department of Clinical Geratology, John Radcliffe Hospital, Oxford

**Introduction**

The baseline culture may affect students’ attitude towards the care for the elderly even before educational implementation. We investigated the attitude difference in a western and Asian country.

**Methods**

We asked the fourth year medical students from University of Oxford, UK and Faculty of Medicine Siriraj Hospital, Thailand to answer a 16-item attitude questionnaire. The details of the questionnaires can be found in J Am Geriatr Soc. 2005; 53: 99-102. Scores range from 1 (strongly disagree) to 5 (strongly agree).

**Results**

There were 66 Oxford- and 146 Siriraj-responses. Multiple regression analysis adjusted for age and sex is shown in the table.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Oxford Mean, SE</th>
<th>Siriraj Mean, SE</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The federal government should reallocate money from Medicare/NHS to research on AIDS and pediatric diseases.</td>
<td>2.64, 0.14</td>
<td>3.39, 0.09</td>
<td>&lt;0.0005</td>
</tr>
<tr>
<td>If I have to choice, I would rather see younger patients than elderly ones.</td>
<td>3.47, 0.13</td>
<td>2.86, 0.08</td>
<td>&lt;0.0005</td>
</tr>
<tr>
<td>Old persons don’t contribute their fair share towards paying for their health care.</td>
<td>1.75, 0.11</td>
<td>2.23, 0.07</td>
<td>0.001</td>
</tr>
<tr>
<td>In general, old people act too slow for modern society.</td>
<td>2.12, 0.12</td>
<td>3.12, 0.08</td>
<td>&lt;0.0005</td>
</tr>
<tr>
<td>I feel comfortable working with elderly adults.</td>
<td>4.15, 0.11</td>
<td>3.56, 0.07</td>
<td>&lt;0.0005</td>
</tr>
</tbody>
</table>

**Conclusion**

Students in the western and Asian countries have different attitude towards the care for the elderly. The geriatric curriculum to develop students’ attitude should be directed on the ground of their baseline viewpoint.

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**ELDER ABUSE AND ADULT PROTECTION: A TRAINING MODEL FOR SPECIALIST REGISTRARS IN CASE IDENTIFICATION, ASSESSMENT AND MANAGEMENT**

A M Thomson1, P Baker2, P J Knowles1

1. Dept of Elderly Care, Salford Royal Hospital, Salford, Manchester, 2. North-Western Deanery, Barlow House, Minshull St, Manchester

**Introduction**

Healthcare workers should feel confident in the recognition, assessment and management of cases of Elder Abuse. Previous work has indicated deficiencies in the delivery of this training. This may, in part, be due to the absence of adequate training models in this field.

The aim of this study was to assess the efficacy of the delivery of a single session educational package to a cohort of Specialist Registrar (SpR) Trainees in Geriatric Medicine.

**Methods**

A 3-hour seminar including medical and sociological aspects of Elder Abuse training was undertaken. The seminar comprised of short lectures, small group case-based discussion, large group feedback and plenary. Pre- and post-session questionnaires recorded trainee’s previous experiences in quality and quantity of such training. Rating scores comparing SpR’s perspectives of recognition, assessment and management of cases before and after the delivery of the training session were also obtained.

**Results**

27 sets of paired data were obtained. Low rating scores for previous quantity and quality of training in elder abuse were also observed.

Mean rating scores for the 3 areas of Elder Abuse interventions were determined. Identification: Pre-session 3.63, Post-session 6.67. Assessment: Pre-session 3.26, Post-session 6.3. Management: Pre-session 3.15, Post-session 6.52.

**Conclusions**

Improved rating scores across each of the 3 domains were observed in the post-session questionnaires. This model is recommended as a simple, easy-to-deliver tool for training trainee doctors on the topic of Elder Abuse.
Stroke is the second leading cause of death worldwide, after heart disease. In 2005 the WHO estimated that stroke accounted for 5.7 million deaths worldwide. Studies have shown that research into stroke is underfunded compared with heart disease or cancer (1). This inconsistency may also be reflected in the media. By searching the databases of major newspapers in Ireland and the UK it is possible to assess coverage of stroke and heart disease.

**Method**

The databases of major newspapers in UK and Ireland were searched using the terms “stroke” and “heart” over a one-year period from 1st May 2006 to 1st May 2007. All articles with the terms “stroke” and “heart” were reviewed to ensure suitability.

**Results**

<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Articles on &quot;heart&quot;</th>
<th>Articles on &quot;stroke&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irish Times</td>
<td>155</td>
<td>85</td>
</tr>
<tr>
<td>Daily Telegraph</td>
<td>503</td>
<td>263</td>
</tr>
<tr>
<td>Guardian</td>
<td>400</td>
<td>154</td>
</tr>
<tr>
<td>The Observer</td>
<td>137</td>
<td>43</td>
</tr>
</tbody>
</table>

Stroke received significantly less media coverage than heart disease, just 31.3% of total articles surveyed.

**Conclusion**

This search of newspaper databases shows that stroke is underreported when compared with heart disease, despite the clinical and financial burden of this condition. As mass media is the commonest source of information on stroke and its risk factors for the general population (2), professionals and stroke advocacy groups should encourage greater media coverage of stroke.

**Reference**

   Apr;37(4):946-50
A CROSS SECTİONAL SURVEY OF HEALTH PROBLEMS OF OLDER GHANAIANS

C L Spice1, A Adotey2, E Ajetey2
1. Ridge Hospital, Ghana, 2. Help Age Ghana, Ghana

Introduction
Two thirds of the world’s over 60’s live in the developing world. There are currently 1.5 million people aged over 60 years in Ghana, representing 5% of the population. This is predicted to rise to almost 6 million by 2050. There is little information available on the health of older people in Ghana, or elsewhere in Sub-Saharan Africa.

Methods
A cross-sectional survey of members of Help Age Ghana. The questionnaire was developed, based on the WHO ICF checklist for brief health information, and included questions on falls, memory problems, immobility, hearing, continence, vision and functional level.

Results
166 (83%) completed questionnaires were received. The average age was 75 years. 61%(101/166) were female. 21%(35/166) reported bad/very bad physical health in the past year. 82%(136/166) reported at least one health problem. Musculoskeletal problems (42%,70/166), visual problems (30%,49/166) and hypertension (33%,55/166) were common. 20%(33/164) had fallen in the last year with a mean number of 2 falls and 64% (21/33) sustained an injury from a fall. Urinary incontinence was reported by 25%(41/166), constipation by 25%(41/166) and faecal incontinence by 8%(14/166).

Conclusions
Health problems were common in this group of older Ghanaians. At present there is little education about ageing issues for health professionals in Ghana. UK Geriatricians and Specialist Societies could help their professional colleagues in Ghana through education and training about the common problems of the elderly.

HEALTHY AGEING IN A UK BIRTH COHORT: FINDINGS FROM THE HERTFORDSHIRE AGEING STUDY

S J Simmonds1, H E Syddall1, K A Jameson1, H J Martin1, C Cooper1, A Aihie Sayer1,2
1. MRC Epidemiology Resource Centre, 2. University Geriatric Medicine, University of Southampton

Introduction
There is increasing interest in understanding the lifecourse determinants of healthy ageing and this requires birth cohorts with longitudinal follow-up. The Hertfordshire Ageing Study is a birth cohort of 1428 men and women born in Hertfordshire between 1920 and 1930 with historical records of early growth.

Methods
First follow-up, comprising a home visit and subsequent clinic to characterise ageing in a wide range of systems, was completed in 1995. Second follow-up was carried out ten years later.

Results
At first follow-up, 824 people were visited at home, of whom 717 attended clinic. Between follow-ups, 153 people died and 312 were lost for other reasons. At second follow-up, 359 were interviewed at home (208 men, 151 women) and 293 subsequently attended clinic.

Characteristics at first follow-up independently associated with death before 2005 included: being interviewed at home but not attending clinic (odds ratio [OR] 2.55 [95%CI 1.60, 4.07], p<0.001); male gender (OR 1.70 [95%CI 1.16, 2.51], p=0.007) and current vs never smoking (OR 2.12 [95%CI 1.23, 3.65], p=0.007).

Conclusion
Completing a home visit but not attending the clinic at first follow-up was a strong predictor of mortality between follow-ups. The Hertfordshire Ageing Study will allow detailed investigation of the lifecourse determinants of healthy ageing.
THE RELATIONSHIP BETWEEN MYOSTATIN GENOTYPE, BIRTH WEIGHT AND MUSCLE STRENGTH IN OLDER PEOPLE

H P Patel¹, K A Jameson¹, H J Martin¹, H Syddall³, T R Gaunt², I N M Day², C Cooper¹, A Aihie Sayer¹,³

1. MRC Epidemiology Resource Centre, University of Southampton. 2. Bristol Genetic Epidemiology Laboratories, Department of Social Medicine, University of Bristol. 3. University Geriatric Medicine, University of Southampton

Introduction
Studies have shown that growth and development in early life influence grip strength, a marker of sarcopenia and ageing in older people. Myostatin is a negative regulator of skeletal muscle growth and there is some evidence that polymorphism in the myostatin gene influences grip strength but its role in explaining the relationship between birth weight and grip strength is unknown.

Methods
1160 men and 1073 women aged 59 – 72 years participating in the Hertfordshire Cohort Study (HCS) were genotyped for single nucleotide polymorphisms (SNPs) in the myostatin gene. A clinical assessment included measurement of grip strength and there were historical records of birth weight. We carried out regression analyses to determine the association between genotype, grip strength and birth weight.

Results
Genotyping for one SNP (rs3791783, intron 2) allele code TT, TC and CC, was successful. There were no significant relationships between this myostatin genotype and grip strength in men or women (men b= −0.27, 95% confidence interval [CI] −1.06, 0.53, p=0.51, women b=0.35, 95%CI −0.27, 0.97, p=0.27) or birth weight (men b=0.04, 95% CI −0.09, 0.17, p=0.57, women b= −0.05, 95% CI −0.17, 0.07, p=0.45).

Conclusions
We found no evidence that this myostatin gene SNP was associated with grip strength or birth weight. The relationship between other polymorphisms in the myostatin gene, grip strength and birth weight now need to be explored.

SECULAR TRENDS IN THE CARDIOVASCULAR RISK PROFILE AND MORTALITY OF STROKE ADMISSIONS IN AN INNER CITY MULTI ETHNIC POPULATION IN THE UK (1997-2005)

A Gunaratne, J V Patel, R I Potluri, P Gill, M Wijetunge, E A Hughes, G Y H Lip

1 University Department of Medicine, City Hospital, Birmingham 2. Department of Primary Care and General Practice University of Birmingham Edgbaston Birmingham

Background
The delivery of targeted health care in optimal management and prevention of stroke and cardiovascular disease (CVD) in a multi ethnic population is an important consideration. An understanding of secular trends in the CVD risk profile and stroke mortality may help to understand healthcare service provision needs.

Objective
To study ethnic differences in the CVD risk profile and mortality of stroke admissions to an inner city teaching hospital serving a multi ethnic population in United Kingdom (1997-2005). Methods: Hospital case notes and registry data of patients admitted with a first onset stroke were reviewed. Secular trends in CVD risk factors, hospital admission rates and 30-day mortality data were analysed.

Results
Between 1997-2005, there were 3083 first onset strokes, of whom 47.6% were male, 9.3% Afro-Caribbean, 9.8% European Caucasian and 15.1% South Asian (SA). There was a significant trend towards a reduction in non-haemorrhagic stroke admissions (1997-2005) (P<0.001) with no ethnic variation (P=0.07). Increases in the co-morbidities of hypertension and hyperlipidaemia were observed (P<0.001), whereas myocardial infarction showed a decline (P<0.001). SA patients were younger on admission (P<0.001), had more hyperlipidaemia (P<0.05) and poorer survival at 30 days (P=.002).

Conclusion
CVD risk profiles amongst patients admitted with non-haemorrhagic stroke have changed over the last decade. In particular, hyperlipidaemia has increased, especially amongst SA. The reduced decline in stroke admissions and 30-day survival of stroke in SA in recent years warrants further investigation.
**PREVALENCE, INCIDENCE AND PREDICTION OF FALLS IN DEMENTIA AND PARKINSON’S DISEASE: A PROSPECTIVE STUDY IN THE ELDERLY**

L M Allan¹, C G Ballard², E N Rowan¹, R A Kenny³

1. Institute for Ageing and Health, University of Newcastle upon Tyne, United Kingdom. 2. Wolfson Centre for Age Related Disorders, King’s College London, United Kingdom 3. Trinity College Institute of Neuroscience, Trinity College Dublin, Ireland

**Introduction**
The objective of the study was to identify potentially modifiable risk factors for falling in older people with mild-moderate dementia according to dementia subtype.

**Methods**
Baseline risk factors were assessed and fall diaries completed prospectively for 12 months in 225 participants: 39 controls; 38 Alzheimer’s disease (AD); 32 Vascular dementia (VAD); 40 Parkinson’s disease with dementia (PDD); 46 Parkinson’s disease without dementia (PD).

Outcome measures were prevalence and incidence of falls, univariate proportional hazard ratios for each risk factor in participants with dementia, and multivariate proportional hazard ratio model incorporating significant univariate risk factors.

**Results**
Annual prevalence of falls: controls: 35.9%; AD: 47.4%; VAD: 46.9%; DLB: 76.7%; PDD: 90.0%; PD: 60.9%.

Prevalence was higher in Lewy body disorders than in controls (DLB: HR: 4.31, 95% CI: 2.20-8.44; PDD: 7.45, 3.94-14.1; PD: 2.33, 1.21-4.47). Incidence of falls/1000 person years: controls: 1023; AD: 2486; VAD: 3135; DLB: 9087; PDD: 19000; PD: 4617.

Incidence was higher in non-AD dementias than in controls (VAD: incidence density ratio 1.73, 1.15-2.62; DLB: 7.08, 4.52-11.1; PDD: 25.6, 15.3-43.0; PD: 4.82, 3.40-6.82). In multivariate analyses, significant predictors of falls were diagnosis of Lewy body disorder (HR: 4.04, 2.42-6.77), previous recurrent falls (2.72, 1.65-4.50), symptomatic orthostatic hypotension (1.87, 1.02-3.42).

**Conclusions**
We suggest that falls prevention programmes in mild-moderate dementia should target management of orthostatic hypotension and Lewy body dementia.

**CLOPIDOGREL – IMPLICATIONS FOR THE TIMING AND OUTCOME OF HIP FRACTURE SURGERY**

J C White, A Johansen

Dept. of Geriatric Medicine, Cardiff University

**Introduction**
Clopidogrel is used for cardiovascular protection, but its potent platelet inhibition has led to concerns over the risk of peri-operative haemorrhage. The datasheet suggests stopping clopidogrel 7 days prior to surgery. Early fixation of hip fractures is associated with improved morbidity and mortality. Delay of surgery for the discontinuation of clopidogrel potentially increases risk. The optimal delay of surgery for these patients is unknown, and practice varies widely.

**Methods**
We examined the implications of this variation in practice in a retrospective analysis of patients taking clopidogrel when admitted with hip fractures. We looked at the relationship between length of delay for surgery, haemoglobin (Hb) drop post-operatively, blood transfusion and outcome.

**Results**
15 patients (mean age 84.1 years). The mean drop in Hb post-operatively for the 7 who underwent surgery without delay (mean 2.7 days) was 3.7g/dl, compared with 2.5g/dl for the 8 whose surgery was delayed (mean 7.5 days). Mean blood transfusion requirements were 1.0 units and 0.25 units respectively.

2 major thrombo-embolic events occurred in those patients having delayed surgery. No major complications were seen in those undergoing early surgery.

**Conclusions**
Blood loss and transfusion are moderately increased if clopidogrel is not withdrawn in advance of surgery. This study identified significant complications which could be attributable to delay in surgery. Further trials are needed to define the risks and benefits of withdrawing clopidogrel before hip fracture surgery.
Introduction

Overall prognosis is poor following odontoid peg fracture but little data exists in the older person where minimal trauma fracture can occur. The objective of this study was to review mechanism of injury, coexistent degenerative disease, management and one year outcome of odontoid fracture in the older person.

Methods

Twenty seven patients aged 65 years and over, admitted with odontoid peg fracture, were identified retrospectively over a three year period (2003-2006). Cart review and follow up assessment were performed.

Results

Fourteen (52%) patients were male with a mean age of 79 years. 16 patients (60%) were aged over 75 years.

<table>
<thead>
<tr>
<th>Mechanism of Injury</th>
<th>Management</th>
<th>Coexistent Spinal Disease</th>
<th>One year Rankin</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTA 7(26%)</td>
<td>Surgical</td>
<td>Multilevel OA 17(63%)</td>
<td>3 10 (37%)</td>
</tr>
<tr>
<td></td>
<td>-Post Fusion 4(15%)</td>
<td>Osteoporosis 6 (22%)</td>
<td>4 10 (37%)</td>
</tr>
<tr>
<td>Fall 14(52%)</td>
<td>-Halo Frame 6(22%)</td>
<td>None 4(15%)</td>
<td>5 2 (7%)</td>
</tr>
<tr>
<td></td>
<td>-From a height 6 (22%)</td>
<td>Conservative 6</td>
<td>5 19(19%)</td>
</tr>
<tr>
<td></td>
<td>-From standing 14(52%)</td>
<td>-Minerva POP 12(44%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Miami J Collar 5(19%)</td>
<td></td>
</tr>
</tbody>
</table>

The mechanism of injury, management, coexistent spinal disease and one year Rankin are shown below.

Conclusions

Odontoid peg fracture in the elderly can occur with minor trauma. Patients tend to have multilevel degenerative osteoarthritis leading to higher fracture risk. Majority of cases were managed conservatively. At one year mortality was 19% and the majority of patients, 75%, were functioning independently. This is the largest case series of odontoid peg fracture outcomes in the elderly.
Introduction
Frailty is defined as multi-system impairment. It is associated with increased hospital admission and mortality in older people yet has been little studied in the UK. We used the Fried Frailty Score to describe frailty among participants in the Hertfordshire Cohort Study.

Methods
Frailty is defined by the Fried frailty score as three or more of these criteria: unintentional weight loss, self-reported exhaustion, weakness (low grip strength), slow walking speed, and low physical activity. We evaluated these criteria in 640 community dwelling people (320 men; 320 women) aged 64 to 74 years.

Result
The prevalence of frailty was 7.2% overall (5.9% [19] men and 8.4% [27] women). We compared self-rated health, falls and admission to hospital in those categorized frail and not frail, as shown in the table below:

<table>
<thead>
<tr>
<th>Prevental (%) of:</th>
<th>Frail</th>
<th>Not Frail</th>
<th>P value for chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor self-rated general health</td>
<td>76.1</td>
<td>16.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Poor self-rated mental health</td>
<td>42.2</td>
<td>22.5</td>
<td>0.003</td>
</tr>
<tr>
<td>Falls in the last year</td>
<td>51.7</td>
<td>32.2</td>
<td>0.034</td>
</tr>
<tr>
<td>Admission to hospital</td>
<td>63.0</td>
<td>36.3</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Discussion
We have demonstrated an overall frailty prevalence of 7.2% in community-dwelling participants of the Hertfordshire Cohort Study. Frailty was strongly associated with poor self-rated general and mental health, falls and hospital admissions. Improved recognition and understanding of frailty is required to develop effective health and social care interventions for older people.

Introduction
Increasingly when older individuals take part in clinical observational studies, a control group is required. Most universities have an active elderly cohort group who participate in a variety of studies, but between recruitment to the cohort list and use in the clinical trial, some may develop medical conditions or others may have had coincidental medical problems that they fail to declare at the outset or which they believe do not prohibit being labelled “fit”.

Method
To study 105 consecutive members of a three-year old cohort group to determine the prevalence of actual and perceived physical ill-health.

Results
24% >80 years

<table>
<thead>
<tr>
<th>Prevental (%)</th>
<th>Our Cohort</th>
<th>ONS GHS 2001 data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living alone</td>
<td>45%</td>
<td>37%</td>
</tr>
<tr>
<td>Self-reported very good health</td>
<td>94%</td>
<td>75%</td>
</tr>
<tr>
<td>Long-standing condition</td>
<td>39%</td>
<td>60%</td>
</tr>
<tr>
<td>Hearing impairment</td>
<td>9%</td>
<td>32%</td>
</tr>
<tr>
<td>Falls in previous year</td>
<td>33%</td>
<td>33%*</td>
</tr>
<tr>
<td>Difficulty cutting toenails</td>
<td>24%</td>
<td>31%</td>
</tr>
</tbody>
</table>

*O’Loughlin

Conclusion
Despite a high rating on “perceived very good health”, our elderly cohort have a high prevalence of long-standing conditions, and markers of frailty such as falls were seen equally in our group and the general household survey. It is unlikely that the long-standing conditions have all developed in the last three years. Caution must be exercised to ensure that elderly cohorts are not only truly representative of the “average” elderly person living in the community, but they have similar biological features.
THE DYNAMICS OF CHRONIC JOINT PAIN: A FOCUS GROUP STUDY

R Gooberman-Hill¹, G Woolhead¹, P Dieppe¹

¹. Department of Social Medicine, University of Bristol.

Introduction
Joint pain is a major cause of disability and is an indication for surgery. This study examined the pain experience and coping strategies of people with chronic hip or knee pain.

Methods
The study used qualitative methods to elicit the experiences of people with joint pain. Participants were 14 men and 14 women aged 57-89, all of whom had hip or knee pain. Six focus groups were stratified according to pain site and severity. Focus groups used structured discussion about joint pain, and were audio-recorded and transcribed. Data were analysed by identifying codes that emerged inductively; material relating to the codes were grouped and compared with one another.

Results
Four key categories were identified: 1) pain is intermittent and variable; 2) pain elsewhere in the body influences the experience of joint pain; 3) pain is inextricable from function; 4) adaptation and avoidance strategies modify the experience of pain. The four categories were dynamically interrelated. The intermittent and variable nature of pain and the presence of pain elsewhere made joint pain unpredictable. However, because participants were aware that function was connected to pain, they were able adapt their activities and thereby reduce the amount of pain that they lived with.

Conclusion
Coping with joint pain is based on the experience of its multifaceted and dynamic nature. This is important for the design of studies and of acceptable interventions.

THE FEASIBILITY OF CARE MAPPING ON ELDERLY CARE WARDS

R Woolley, J Green, D Brooker, J Young

Academic Unit of Elderly Care & Rehabilitation, Temple Bank House, Bradford Royal Infirmary, Duckworth Lane, Bradford

Introduction
The NHS is committed to ensuring patients receive hospital care in a dignified manner. Methods of quantifying and developing dignity in hospital wards are required. Care mapping, otherwise known as dementia care mapping (DCM), is an observational practice development method designed to improve person-centred care for people with dementia in formal care settings. Our research objective was to investigate the feasibility of DCM in elderly care hospital wards, including with patients who have health conditions other than dementia.

Methods
58 patients (12 with dementia) in three general hospital elderly care wards and two community hospitals were observed (mapped) using DCM for 84 observation hours between 08:35-19:50 over 21 days.

Results
414 patient hours (4,968 five-minute time frames) were mapped. There were no major data collection issues other than the relatively high proportion (942/2,376 (40%) time frames) of missing data in the community hospitals due to time patients spent away from the area being mapped. All 3,624 (73%) of the time frames with patient observed data could be coded utilising the existing Behaviour Category Codes and Mood/Engagement Value coding frameworks.

Conclusions
The results from this preliminary study are promising and indicate that the DCM method is potentially feasible for use in elderly care hospital wards, particularly in general hospitals, without the need for major modifications to the coding frameworks or method of undertaking data collection.
UNDERSTANDING BARRIERS TO DELIRIUM CARE: A SURVEY OF KNOWLEDGE AND ATTITUDES AMONG UK JUNIOR DOCTORS

D H J Davis1, A M MacLullich2, on behalf of the National Delirium Survey

1. Department of Clinical Geratology, University of Oxford, 2. Department of Geriatric Medicine, University of Edinburgh

Introduction
Delirium remains strikingly under-recognised and poorly managed in comparison to other common and serious acute disorders. The underlying reasons for this are unclear. We conducted a multicentre survey of knowledge of and attitudes to delirium in UK junior physicians.

Methods
Junior physicians working in acute medical specialties were asked to complete a brief, on-the-spot questionnaire, which included an item on specialty experience.

Results
There were 784 respondents, from 34 hospitals. Respondents were aware that delirium is under-recognised, but they had patchy knowledge of its diagnostic criteria, and reported the need for better training (see table for selected results).

Conclusions
UK junior doctors' lack of basic knowledge of delirium, rather than a lack of awareness of its clinical significance, may be important in determining its under-recognition. Experience of working in geriatric medicine has limited effects on confidence in and knowledge of delirium diagnosis and management.

<table>
<thead>
<tr>
<th>Feature essential for diagnosis:</th>
<th>Geriatrics experience N=399</th>
<th>No geriatrics experience N=351</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident in knowledge of diagnostic criteria for delirium*</td>
<td>28%</td>
<td>14%</td>
</tr>
<tr>
<td>Acute onset</td>
<td>89%</td>
<td>88%</td>
</tr>
<tr>
<td>Inattention</td>
<td>32%</td>
<td>31%</td>
</tr>
<tr>
<td>Visual hallucinations</td>
<td>35%</td>
<td>38%</td>
</tr>
<tr>
<td>Agitation</td>
<td>52%</td>
<td>49%</td>
</tr>
<tr>
<td>Delirium thought to be under-recognised</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Does not use benzodiazepines as first line pharmacotherapy</td>
<td>80%</td>
<td>62%</td>
</tr>
<tr>
<td>Aware of correct dose range of haloperidol*</td>
<td>42%</td>
<td>31%</td>
</tr>
<tr>
<td>Aware of poor prognosis</td>
<td>57%</td>
<td>52%</td>
</tr>
<tr>
<td>Feels has had adequate training*</td>
<td>24%</td>
<td>9%</td>
</tr>
</tbody>
</table>

*p<0.001(Chi square). All other p-values > 0.05.

WHAT SHOULD PATIENTS IN LONG TERM CARE PAY FOR? FALLOUT FROM THE IRISH NURSING HOME SCANDAL

L Cogan1, L A Kelly1, D Power2

Department of Medicine for the Older Person, Mater Misericordiae University Hospital, 1. MSc in Geriatric Medicine, Keele University. 2. Health Service Executive(HSE)

Introduction
In 2004 the HSE was found to have charged patients in public long term care(LTC) beds since 1976 without legal basis. It is estimated that 50,000 patients were illegally charged 80% of their pensions and the expected repayments will amount to 1.4 billion euro. Since 2006 the Irish health service(HSE) has operated 15,000 Patient Private Property Accounts(PPPA) which administer the personal finances of patients in LTC. The effective administration of these accounts and seperation from the HSE is of vital importance.

Methods
A postal questionnaire was sent to 176 HSE operated institutions where PPPAs are held. The institutions were asked which items should be funded by HSE and which should come from PPPAs.

Results
There was a 32% response rate. The results are represented in percentages in the table below.

<table>
<thead>
<tr>
<th>Item</th>
<th>HSE</th>
<th>PPPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicines</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Medical treatment</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Food and Nutrition</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>Aids and Appliances</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>GP visits</td>
<td>95</td>
<td>5</td>
</tr>
<tr>
<td>Clothing</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Personal Grooming</td>
<td>31</td>
<td>69</td>
</tr>
<tr>
<td>Personal Hygiene</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td>Social Activities</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Treats</td>
<td>22</td>
<td>78</td>
</tr>
</tbody>
</table>

Conclusion
These results can be interpreted that administrators felt that giving patients control over discretionary items would increase personal dignity or that patients personal monies could only be used for items in the lower category of personal maintenance. In the aftermath of the nursing home charges scandal there is wariness of accessing patients personal funds.
Introduction
Longitudinal data on urinary incontinence and bowel symptoms in older people are scarce.

Methods
A population-based survey comprising 398 people (173 men and 225 women) aged 70 years and over. The 240 (100 men and 140 women) survivors were re-interviewed six years later. Cox proportional hazards models were used to examine the associations of urge urinary and faecal incontinences and constipation with mortality and logistic regression models to determine predictors of incident symptoms. Age, gender, comorbidity, depressive mood, activities of daily living (ADL), instrumental activities of daily living (IADL) and mobility disability were the covariates.

Results
The incidence for urge urinary incontinence, faecal incontinence and constipation were 17 % (n=46), 9 % (n=34) and 13% (n=36), respectively. The age-and gender-adjusted associations of urge urinary and faecal incontinences and constipation with mortality and logistic regression models to determine predictors of incident symptoms. Age, gender, comorbidity, depressive mood, activities of daily living (ADL), instrumental activities of daily living (IADL) and mobility disability were the covariates.

Conclusions
Comorbidities and disabilities explain the associations between urinary and faecal incontinences and mortality. Urge urinary incontinence is independently predicted by comorbidity, depressive mood and IADL disability and faecal incontinence by comorbidity.
Efficacy and Safety of Zoledronic Acid 5mg in Preventing Fractures in Men and Women with Prevalent Hip Fracture: The Horizon–Recurrent Fracture Trial

D M Reid1, K Lyles2, C Colon-Emeric2, J Magaziner3, J Adachi4, C Pieper5, L Hyldestrup5, C Mautalen6, C Recknor7, K Moore8, C Lavecchia8, J Zhang8, P Mesenbrink8, E Eriksen9, S Boonen10, M Stone11, J Wass12, E Dennison13, G D Summers14, A McLellan15


Introduction

An international, multicentre, randomized, double-blind, placebo-controlled, parallel-group trial (HORIZON-RFT) assessed whether zoledronic acid (ZOL) 5mg reduces subsequent clinical fractures in men and women ≤50 years after a recent hip fracture.

Methods

Patients received daily vitamin D3 and calcium supplements. 2111/2127 randomized patients received once-yearly IV ZOL 5mg infusions (n=1054) or placebo (n=1057) and were followed until 211 experienced new clinical fractures (primary efficacy endpoint).

Results/Conclusions

Baseline characteristics were similar between groups. Median age: 76 years (range, 50-98); 76% women. 92 ZOL and 139 placebo patients experienced clinical fractures in men and women 750 years after a recent hip fracture.

Results/Conclusions

Baseline characteristics were similar between groups. Median age: 76 years (range, 50-98); 76% women. 92 ZOL and 139 placebo patients experienced clinical fractures. 2-year cumulative event rates: 8.59% and 13.88%, respectively, based on Kaplan-Meier estimates; 35% RRR (HR=0.65; 95% CI: 0.50-0.84; P=0.0012). ZOL reduced risk for clinical vertebral and nonvertebral fractures versus placebo by 46% (HR=0.54; 95% CI: 0.32-0.92; P=0.0210) and 27% (HR=0.73; 95% CI: 0.55-0.98; P=0.0338), respectively. ZOL reduced hip-fracture risk by 30% versus placebo (HR=0.70; 95% CI: 0.41-1.19; P=NS). AEs and SAEs were comparable between groups. There were no significant differences in cardiovascular parameters or long-term renal function, and no reported ONJ cases. Fewer deaths occurred with ZOL (9.58% vs 13.34% placebo), a 28% lower mortality risk (HR=0.72; 95% CI: 0.56-0.93, P=0.0117). Subjects with prevalent hip fracture receiving ZOL experienced significantly fewer clinical fractures versus placebo. ZOL was well tolerated with a favourable safety profile. This is the first trial demonstrating mortality benefit for an antiresorptive agent.

Stroke in the Very Old: Clinical Presentations and Outcomes

W Muangpaisan1,2, J Hinkle2,3, M Westwood4, J Kennedy2, A Buchan2

1. Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand 2. Acute Stroke Programme, Nuffield Department of Clinical Medicine, University of Oxford, UK 3. Oxford Brookes University, 4. Oxford Stroke Unit, Oxford Radcliffe Hospital NHS Trust

Introduction

Stroke in the very old might be different from younger patients. We investigated demographics, risk factors, clinical presentations and clinical outcome of stroke in patients aged 80 or over and the younger.

Methods

Data were collected prospectively from patients with a confirmed diagnosis of acute stroke admitted to the Acute Stroke Unit, John Radcliffe Hospital, Oxford between July 2006 and March 2007.

Results

There were 178 ischaemic strokes, 22 haemorrhagic strokes and 14 transient ischaemic attacks. There were 111 patients aged < 80 and 103 patients aged ≥80. The very old had higher premorbid modified Rankin score (mRS 2-5) (20.7% vs. 55.3%, p <0.0005) and presented to the hospital later (105 vs. 265 minutes; p<0.0005).

The very old were less independent at discharge (50.5% vs. 27.5%, p=0.001).

Conclusion

Increased awareness of atypical presentations, strategies to shorten the time to hospital arrival and more studies on thrombolysis in the very old might change stroke outcome in this group of patients.
**NEUROCARDIOVASCULAR INSTABILITY IS MORE PREVALENT IN MILD COGNITIVE IMPAIRMENT**

O Collins, S Dillon, R Coen, B A Lawlor, R A Kenny

*Trinity Institute of Neurosciences and Mercer's Institute of Research on Ageing in St James's Hospital, Dublin*

**Introduction**

Neurocardiovascular instability is present in 60% of older persons with Mild Cognitive Impairment (MCI) disrupting cerebral perfusion and could be a key driver for the progression to dementia. In this longitudinal study of people with MCI, we aim to track the incidence of dementia and the cardiovascular and neurological variables which predict conversion during long-term follow up.

**Methods**

MCI subjects are recruited through specialized referral clinics. Neuropsychological and neurocardiovascular assessments are performed at baseline and repeated annually over 3 years on subjects and age-matched controls. Working memory, executive function, speed and attention are assessed using the CAMCOG and Cognitive Drug Research battery. Non-invasive blood and heart-rate assessments examine autonomic function, carotid sinus hypersensitivity and blood-pressure and heart-rate variability.

**Results**

To date 35 subjects (mean age 72.4 +/-7.4) and 15 controls (mean age 74.5 +/-4.1) have enrolled in our study. The mean MMSE of participants is 26 (19-30) and CAMCOG is 84 (56-101). Compared with controls, symptomatic orthostatic hypotension (19/35 vs. 3/15 p< 0.05), carotid sinus hypersensitivity (7/35 vs.1/15 p<0.05) and autonomic dysfunction (23/35 vs.2/15 p<0.001) are more common in MCI patients. Those with more severe neurocardiovascular instability have more severe memory impairment.

**Conclusion**

Preliminary data confirms that Neurocardiovascular Instability is more prevalent in MCI. This research study will inform clinical therapies aimed at the earliest stages of dementia when they are most likely to have the greatest impact.

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**THE IRISH LONGITUDINAL STUDY OF AGEING (TILDA)**

C O'Regan, H Cronin, A Moreira, Y Kamiya, B Whelan, RA Kenny

*Trinity College Dublin*

**Introduction**

By 2030, one in four Irish people will be 65 years or older. This unprecedented ageing phenomenon, coupled with the fact that Ireland has one of the lowest healthy life expectancies in Europe, has huge implications for society, economy and policy makers.

TILDA aims to provide policy-relevant research that will change and greatly enhance the ageing experience for Irish people today and in the future.

**Key multi-disciplinary questions:**

1. What changes occur in physical, psychological and cognitive function over time and across ages?
2. What are the physical, social and economic factors that condition these changes?
3. What are the adaptive responses to change and how do these contribute to successful ageing?

**Method**

A longitudinal design, will provide immediate and continual research output from a nationally-representative sample of approximately 10,000 people aged >50 years, followed for a minimum of 10 years. TILDA will combine a number of data-collection strategies, from face-to-face interviews to clinical examination including collection of biomarkers.

TILDA’s study design has evolved from and is in collaboration with other leading longitudinal studies - The Health and Retirement Study (USA), The English Longitudinal Study on Ageing and the Survey of Health and Retirement in Europe. TILDA is therefore in a unique position to capitalise on output and lessons from previous studies and facilitate ongoing international comparative research on this topic.
S Kennelly¹, F Crawford², M Mullan², B Lawlor¹, R A Kenny¹

1. St. James Hospital, Dublin and the Trinity College Institute of Neurosciences. 2. Roskamp Institute in Sarasota Florida

Introduction
Nilvadipine is a dihydropyridine calcium antagonist that crosses the blood-brain barrier. Studies have demonstrated that Nilvadipine increases cerebral blood flow to areas of diminished perfusion, and positively impacts on central and peripheral β-amyloid levels implying a potential role in the treatment of AD.

Methods
A ten-week open label study was used. Subjects with mild/moderate AD (MMSE 14-27) were enrolled. Subjects with low blood pressure (<120/75 mmHg) and subjects on alternative anti-hypertensives were excluded. All subjects received standard therapy for AD. Subjects had pre and post treatment active stands and 24-hour BP monitors.

Results

<table>
<thead>
<tr>
<th></th>
<th>Nilvadipine 8mg daily for 6 weeks</th>
<th>No Nilvadipine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>N=17</td>
<td>N=5</td>
</tr>
<tr>
<td>Age</td>
<td>Mean age 67.23+/−9.26</td>
<td>Mean Age 70.8+/−12.2</td>
</tr>
<tr>
<td>Baseline MMSE</td>
<td>17.88+/−3.55</td>
<td>24.2+/−1.1</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

7 subjects in the treatment group reported 9 adverse events. Of these 5 were possibly related to Nilvadipine. These included 2 “dizzy spells”; 2 episodes of flushing and 1 headache. No subject required dose reduction or wished to discontinue medication. 3 adverse events and 1 serious adverse event were deemed not related to the medication and these included urinary symptoms, abnormal liver function tests, and any events that occurred while subjects were not taking trial medication. 2 subjects in the control group reported adverse events including urinary symptoms and headache.

Discussion
Results to date demonstrate that Nilvadipine is well tolerated in normo-tensive subjects with AD.
## Platform Presentations

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Friday, 23 November 2007
Introduction
Ambulatory blood pressure appears to be a better predictor of cardiovascular outcome than blood pressure measured in the clinic setting in younger adults.

Our aim was to determine if ambulatory blood pressure predicts mortality independently of clinic blood pressure and other cardiovascular risk factors in those greater than 65 years old.

Methods
1,144 individuals aged 65 and over referred to a single blood pressure clinic had 24-hour ambulatory blood pressure measurement and clinic measurement at baseline off treatment. During a mean follow-up period of 6.7 years there were 385 deaths, of which 246 were cardiovascular.

Results
In a Cox proportional hazards model with adjustment for gender, age, risk indices, and clinic blood pressure, a higher mean value of ambulatory blood pressure independently predicted cardiovascular mortality. The relative hazard ratios for each 10-mmHg rise in systolic blood pressure were 1.10 (1.06-1.18, P < 0.001) for daytime and 1.18 (1.11-1.25, P< 0.001) for night-time pressure. The hazard ratios for each 5-mmHg rise in diastolic blood pressure were 1.05 (1.00-1.10, P = NS) for daytime and 1.09 (1.04 – 1.14, P < 0.001) for night-time diastolic pressure. The hazard ratios for night-time ambulatory blood pressure remained significant after adjustment for daytime ambulatory pressure.

Conclusions
Ambulatory blood pressure has superior prognostic value to clinic measurement in elderly subjects. Night-time blood pressure is the strongest predictor of cardiovascular mortality in this age group.
J McManus1, E Ouldred1, H Hassan1, R Pathansali1, R Stewart2, A Macdonald2, S Jackson1

Clinical Age Research Unit, King’s College Hospital, Denmark Hill, 2. Institute of Psychiatry, De Crespigny Park, Denmark Hill, London

Introduction
The aim of this study is to assess two screening tools - the Confusion Assessment Method (CAM) and the Delirium Rating Scale (DRS) - in the detection and monitoring of delirium in acute stroke. The CAM has not been assessed previously in the stroke setting.

Methods
On admission, all eligible acute stroke patients were screened for delirium using the Confusion Assessment Method (CAM), the Delirium Rating Scale (DRS) and in addition, the MMSE. Patients were then screened weekly for up to 4 weeks, if not discharged before that. The tools were compared against each other looking for agreement and suitability for use in the future.

Results
Of 110 eligible patients, 82 were recruited over a seven month period in total using any scale, delirium was detected in 23 patients (28%). In 21 cases, delirium was detected on admission. 2 cases of delirium were detected after week 1. We found good agreement between the CAM and DRS on admission ($k=0.97$) and in subsequent weeks ($k=0.86, 0.79, 1$). An MMSE < 10 showed good agreement with delirium detection (kappa score 1, 0.82, 0.83 and 1 at weeks 1 to 4).

Conclusions
Delirium is a common complication post-stroke and usually develops at onset. Screening tools are effective in detecting and monitoring delirium after stroke. In trained hands, the CAM is equivalent to the more rigorous DRS. Although not an ideal screening tool for delirium in acute stroke, the MMSE may be useful in identifying patients who are at high risk of having delirium.
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Marjory Warren House
31 St John’s Square
London
EC1M 4DN

Tel: + 44 (0)20 7608 1369
Fax: + 44 (0)20 7608 1041
Email: general.information@bgs.org.uk
Website: www.bgs.org.uk

layout and design by Recia Atkins