

# Hip fractures, dementia and palliative care

There is a lack of literature specifically exploring the management of fractured neck of femur patients who may have palliative care needs for illnesses besides malignancy such as those with end stage dementia. Patients with dementia are not considered to have a terminal illness and consequently receive suboptimal palliative care.

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Hip fractures in older patients are accountable for up to 20% of orthopaedic bed occupancies in the UK<sup>1</sup> and are a major source of morbidity and mortality in patients sustaining them.<sup>2</sup> Operative fixation of the fractured hip remains the gold standard form of treatment with early mobilisation, alleviation of pain and reduced mortality rates.<sup>3</sup> There is increasing evidence with regards to the perioperative management of older elective surgical patients as summarised by Egol and Strauss<sup>3</sup> and some excellent initiatives such as the Proactive care of Older People undergoing Surgery (POPS) service pioneered at Guy and St Thomas' hospital.<sup>4</sup> However there appears to be a distinct lack of literature specifically exploring the management of fractured neck of femur patients who may have palliative care needs for illnesses besides malignancy such as those with end stage dementia. It is acknowledged that patients with

advanced malignancy and a poor performance score according to the Eastern Co-operative oncology (ECOG) scale with hip fractures should not automatically be referred for surgery.<sup>5</sup> Moreover there is also an acknowledgment of the need for improved palliative care in patients with dementia.<sup>6</sup> With a median survival time of 1.3 years, advanced dementia is associated with a life expectancy similar to that of terminal illnesses such as metastatic breast cancer,<sup>7</sup> yet the two types of conditions are likely to be considered differently when it comes to treatment algorithms for the management of fractured neck of femurs (operative versus non operative) in terms of the potential need for palliative care input and conservative treatment.

## Fragility fractures

Previous studies have highlighted the importance of early operative

treatment for hip fractures and recommend fracture fixation within 48 hours of sustaining the injury for the majority of patients.<sup>3</sup> This view is widely held and is reinforced in the National Hip Fracture Database (NHFD) National Report 2010 whereby hospitals with greater than 10% of their patients undergoing non operative management are encouraged to review their preoperative assessment process.<sup>8</sup>

In addition there has been a strive towards advocating timely and co-ordinated multi-disciplinary care to improve outcomes for patients with hip fracture. The best practice tariff (BPT) for hip fracture aims to enable the NHS to improve the quality of hip fracture care by reducing unexplained variation in practice. This financial incentive to improve care, stipulates that all of the indicators for hip fracture care

must be achieved in order to qualify for the best practice tariff and receive payment; namely, to operate within 36 hours of hip fracture diagnosis and to ensure the provision of consultant orthogeriatrician led multidisciplinary care.<sup>9</sup>

A study conducted by Sherk et al demonstrated that the mortality rate at 16 weeks post injury in older institutionalised patients with hip fracture was more than 50% for the 45 patients managed non-operatively. The 53 patients who underwent prompt surgery had a 16 week mortality rate of 28%.<sup>10</sup>

Moran et al have demonstrated that patients with comorbidities causing a delay in surgery had 2.5 times the risk of death within 30 days compared to those fit for immediate operative intervention.<sup>11</sup> McGuire et al in a retrospective review of 18,209 older patients with hip fracture demonstrated that surgical delay was an independent risk factor for mortality after hip fracture in patients over 65.<sup>12</sup>

There is however, an appreciation of the need to delay surgery in patients who need to be medically optimised. Sexson and Lehner found that patients with greater than three medical comorbidities had a poorer survival rate when surgery was performed within 24 hours compared with those optimised and operated beyond 24 hours.<sup>13</sup>

## Hip fractures and cognitive impairment

Studies have demonstrated that patients with dementia or

cognitive impairment are at increased risk of hip fractures,<sup>14,15</sup> less likely to recover function, more difficult to rehabilitate and more costly to treat<sup>16</sup> when compared with their non-cognitively impaired age and sex matched counterparts.<sup>17,18</sup> Baker et al suggest patients with Alzheimer's dementia (AD) and their caregivers should be advised on how to prevent hip fracture.<sup>14</sup>

Morrison and Siu in a retrospective cohort examining survival in end stage dementia following acute illness report that patients with advanced dementia and hip fracture or pneumonia had a very poor prognosis.<sup>19</sup> Six month mortality for patients with end stage dementia and pneumonia was 53% compared with 13% for cognitively intact patients. For those with end stage dementia and hip fracture the six month mortality was 55% compared with 12% for cognitively intact patients. The authors propose that in view of the limited life expectancy of this group of patients, that they should be managed conservatively. In an additional study conducted by the same authors, they report that patients with cognitive impairment and hip fracture are likely to receive a third as much analgesia as cognitively intact controls<sup>20</sup>. Unfortunately, inadequate analgesic provisions in the cognitively impaired, is widespread and is now well documented within the literature.<sup>21,22</sup> Thus, Mehta et al suggest implementation of evidence based guidelines to improve acute pain management practices in patients with cognitive impairment.<sup>23</sup>

## Palliative care and dementia

Cognitive impairment, even after health and other social factors have been controlled for, is a strong independent predictor of mortality in older patients.<sup>24</sup> Currently an estimated 24.3 million people worldwide have dementia and it is projected that the number will rise to over 80 million by 2040.<sup>25</sup> Only one-third of patients receive a formal diagnosis.<sup>26</sup> Mitchell et al in their study of end of life care in patients with advanced dementia and cancer who were resident in nursing homes and died within a year of admission, concluded that patients with dementia are not considered to have a terminal illness and consequently receive suboptimal palliative care.<sup>27</sup> In their study 1.1% of residents with advanced dementia were perceived to have a life expectancy of less than six months and yet 71% of patients died within that time frame. In addition, patients with advanced dementia were more likely than those with cancer, to undergo burdensome interventions.

Sampson published a review article on palliative care for people with dementia in 2010.<sup>28</sup> Much like in her earlier report with Hughes and colleagues in 2007,<sup>6</sup> she emphasises the need for improving end of life care in those with dementia, stating that we need to better identify those who have dementia and are nearing the end of their life so that they and their carers can benefit from palliative care.

Some researchers have suggested<sup>29</sup> or sought<sup>30</sup> to

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If switching from Pradaxa to parenteral anticoagulant wait 12 hours after the last dose of Pradaxa; if switching from parenteral anticoagulant to Pradaxa then Pradaxa should be given 0-2 hours prior to the time that the next dose of the alternate therapy would be due, or at the time of discontinuation in case of continuous treatment; if switching from Pradaxa to VVA adjust the starting time of the VVA based on CrCl; if switching from VVA to Pradaxa stop VVA and give Pradaxa once VVA < 2.0. Concomitant patients can stay on Pradaxa whilst being cardioverted. Not recommended aged < 18 years. Pradaxa should be swallowed whole with water, with or without food. Patients should be instructed not to open the capsule as this may increase the risk of bleeding. Contraindications: Hypersensitivity to any component; severe renal impairment (CrCl < 30 mL/min); active clinically significant bleeding; organic lesion at risk of bleeding; impairment of haemostasis; hepatic impairment or liver disease expected to have any impact on terminal, concomitant systemic anticoagulation, cyclosporine, ticagrelor, tacrolimus. Warnings and Precautions: Not recommended if liver enzymes > 2 ULN. Haemorrhagic risk: Close clinical surveillance (signs of bleeding or anaemia) is recommended throughout the treatment period, especially when haemorrhagic risk is increased or risk factors combined. Factors which may increase haemorrhagic risk: age ≥ 75 years; metabolic renal impairment (CrCl 30 – 50 mL/min); P-glycoprotein inhibitor co-medication; body weight < 50 kg; acetylsalicylic acid (aspirin), NSAID, clopidogrel, diuretics/urokinases associated with a risk of bleeding such as coagulation disorders, thrombocytopenia or functional platelet defects; active alcohol or drug abuse; recent GI bleeding, recent injury or major trauma, recent CH or brain, spinal or ophthalmic surgery, bacterial endocarditis. The measurement of dabigatran related anticoagulation may be helpful to avoid excessive high exposure to dabigatran in the presence of additional risk factors. Patients who develop acute renal failure must discontinue Pradaxa. If severe bleeding occurs, discontinue treatment and investigate the source of the bleeding. Avoid or use with caution agents which may increase the risk of haemorrhage. Avoid concomitant administration with P-gp inducers. 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identify predictors of death in dementia, given that one of the criteria identified by the American Medicare Hospice Benefit is a life expectancy of less than six months.<sup>31</sup> Sachs et al<sup>32</sup> suggest that hip fracture or pneumonia in dementia<sup>19</sup> should be used as one of the potential markers of dementia severity clinicians can use when deciding to instigate discussions about the potential for hospice care.

### Discussion

There has been a very positive surge in interest and funding into dementia in recent years with heightened public awareness aided by the National Dementia Awareness Campaign, the revised NHS Operating Framework in which dementia was to be prioritised<sup>33</sup> and following the publication of NICE quality standards for dementia care.<sup>34</sup> In addition the Department of Health published a revised, updated outcomes focused implementation plan for “Living well with dementia: A National Dementia Strategy” which was published in February 2009.<sup>35</sup>

The publication of the commissioning guide for end of life care (EOLC) for people with dementia offers hope that one day we will be able to achieve the many potential benefits of robustly commissioning EOLC for people with dementia as described in the guide itself.<sup>36</sup>

The “Blue Book” published by the British Orthopaedic Association, which advises on the care of patients with fragility fractures, comments on the observation that conservative

management of hip fractures is rarely undertaken in developed countries except in certain circumstances, which includes when life expectancy is so short that the risks of surgery outweigh the benefits.<sup>37</sup> There is no elaboration however on how short ones life expectancy has to be in order to deny surgery on the grounds of palliation. The Blue Book also highlights the role of primary care in identifying high risk groups for hip fracture prevention in the community however the patients with cognitive impairment who experience the greatest mortality rates and the highest risk of fracture are not mentioned.

The NHFD National Report 2010<sup>8</sup> advocates palliative management of patients who present in such poor health that surgery offers no benefit. It does not however define what constitutes “such poor health” but is likely to encompass those considered moribund secondary to any form of debilitating illness.

As clinicians, we may not be questioning the appropriateness of operative interventions in patients with advanced dementia, enough. For those in which we do manage surgically whom statistically have such a poor prognosis are we perhaps operating within the doctrine of double effect ie. operating to alleviate pain but in doing so, especially in those unlikely to survive much beyond the operation date, denying them of a more comfortable end to their life by subjecting them to the physiological stress of an operation. Indeed operating in a patient with advanced dementia

if performed to alleviate pain or facilitate nursing, is a form of palliation.

In a study conducted by McNamara and Sharma which looked at surgery or palliation for hip fractures in patients with advanced malignancy, in those managed palliatively in hospices or on palliative care units the presence of a fracture did not pose exceptional nursing problems, as these specialist nurses are used to handling extremely debilitated patients with multiple pain sites.<sup>5</sup> Perhaps we should be investing more time and money in to training our nursing staff in the manual handling of patients with bone pain. We could tap in to the expertise of palliative care nurses and the pain team with regards to ensuring adequate analgesic provision as a first basic step in managing our complex cohort of patients, rather than operating to alleviate pain. Alternatively if we move towards not operating in patients with end stage dementia we may then perpetuate the stigma already attached to a diagnosis of dementia.

On balance, given that little evidence exists regarding appropriate analgesia for patients with hip fracture<sup>38</sup> and with the knowledge that operative intervention if successful is the best form of analgesia, surgery probably ought to remain the default treatment algorithm of choice in patients with end stage dementia and hip fractures who are deemed likely to have the physiological reserve to survive the operation. Dementia is a progressive neurodegenerative terminal illness and in some

patients it is of such severity that it should carry as much weight for not operating as perhaps a person with critical aortic stenosis or end stage cardiac failure would be considered not appropriate for surgery.

The June 2011 NICE guidance on the management of hip fracture in adults reports that to date there are no clinical trials to define the optimal rehabilitation pathway for patients with cognitive impairment.<sup>39</sup> Thus there is scope for research in to the management of hip fractures in this complex group of patients. As aforementioned those with advanced dementia sustaining hip fractures receive less analgesia and experience greater mortality rates when compared to the cognitively intact. Funding needs to be directed towards research in to the following areas:

- How best to assess pain in patients with advanced dementia who fracture their hips eg. pain assessment tools
- The best way to manage pain conservatively from the outset (including manual handling techniques and pharmacological interventions) or pre, peri and post operatively
- Whether early intervention by specialist pain teams and palliative care teams affects patient outcomes eg. improvement in pain scores, decision to manage conservatively, relatives' perceptions of the management of pain and/or transition towards end of life.

## Conclusion

There is a definite role for the involvement of palliative care team specialists in the management of patients with advanced dementia sustaining hip fractures. A simple way of incorporating this into standard practice would be to identify such patients and subsequently inform the palliative care team of their admission when they first present to emergency departments. In this way we could benefit from their involvement in the care of this patient demographic whom statistically experience higher mortality rates and in some cases are nearing the end of their lives, from the point of admission, rather than waiting until medical optimisation has failed, or consider their involvement as an afterthought. The mortality statistics in patients with advanced dementia sustaining hip fractures reflect the need to consider the palliative care team as integral members of the multidisciplinary team dealing with such patients and highlights a need for their early invaluable input.

**Conflict of interest: None declared**

**References available on the online version of this article at [www.gerimed.co.uk](http://www.gerimed.co.uk)**