THU0486

THE VITAMIN D RECEPTOR EXPRESSION IN SKELETAL MUSCLE OF WOMEN WITH DISTAL RADIUS FRACTURE

H.S. Gong¹, K. Kim². ¹Department of Orthopaedic Surgery, Seoul National University Bundang Hospital, Seongnam; ²Department of Orthopaedic Surgery, Hallym University College of Medicine, Chuncheon, Korea, Republic of Ireland

Background: A distal radius fracture (DRF) is the most common upper extremity fracture in old women. Since DRFs typically occur earlier than hip fractures by an average of 15 years, they can reflect early changes of bone such as osteoporosis and muscle frailty for instance, the loss of muscle mass.

Objectives: We aimed to evaluate the relationship between the vitamin D receptor (VDR) expression in the muscle cell and the muscle mass in women with a DRF.

Methods: This research was conducted as a part of the Study on Ageing Radial fracture Cohort (SARCO) which is an ongoing longitudinal, population-based cohort investigation of patients with a DRF which began in November 2015. For the current study, we prospectively recruited 45 women over 50 years of age (mean age, 66 years) with DRF and acquired biopsy of the forearm flexor muscle. The muscle cross-sectional area (CSA) and VDR expression were measured using immunohistochemistry staining. The clinical parameters including grip strength, gait speed, body mass index (BMI), bone mineral density (BMD), and serum vitamin D levels were compared between patients grouped by appendicular lean mass index and were correlated with the VDR expression.

Results: Twelve patients (27%) showed a decreased appendicular lean mass index, less than the cut-off value of 5.4 kg/m² which was suggested by the Asian Working Group for Sarcopenia. Patients with a low appendicular lean mass index had significantly lower muscle CSA ($p=0.037$), but a higher VDR expression ($p=0.045$) than those with higher indices. VDR expression was negatively correlated with BMI ($r=-0.417$, $p=0.004$) and appendicular lean mass index ($r=-0.316$, $p=0.044$).

Conclusions: DRF patients with low appendicular lean mass index presented high VDR expression and low CSA in forearm muscle cells. This suggests that the VDR expression might be up-regulated in the attempt to compensate for the decreasing muscle mass. Further studies are necessary to explore the role of VDR in the progression of sarcopenia.

REFERENCES:

- [1] Ceglia L, Harris SS. Vitamin D and its role in skeletal muscle. *Calcif Tissue Int* 2013;92(2):151–162.
- [2] Bischoff-Ferrari H, Borchers M, Gudat F, Dürmüller U, Stähelin H, Dick W. Vitamin D receptor expression in human muscle tissue decreases with age. *J Bone Miner Res* 2004;19(2):265–269.
- [3] Frontera WR, Reid KF, Phillips EM, Krivickas LS, Hughes VA, Roubenoff R, Fielding RA. Muscle fiber size and function in elderly humans: a longitudinal study. *J Appl Physiol* 2008;105(2):637–642.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4998

THU0487

AN AUDIT OF THE USE OF PERCUTANEOUS VERTEBROPLASTY FOR OSTEOPOROTIC VERTEBRAL FRACTURES IN A UK RHEUMATOLOGY CLINIC

J. Pinnell¹, H. Merris¹, M. Dhillon², K. Chaudhuri¹. ¹Rheumatology; ²Interventional Radiology, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK

Background: University Hospital, Coventry, UK (UHCW), offers percutaneous vertebroplasty (PVP) to patients with painful osteoporotic vertebral fractures. The National Institute for Health and Care Excellence (NICE) Technology Appraisal 279 (TA279) (2013) restricts the use of PVP to patients with severe ongoing pain despite optimal pain management, where the pain corresponds to the level of fracture on examination and imaging.¹

Objectives: To audit the use of PVP by Rheumatology at UHCW against NICE TA279.¹

To assess the clinical outcomes of PVP for our patients.

Methods: The records of all UHCW Rheumatology patients who received PVP from MD³ (Interventional Radiologist) between September 2007 and August 2014 were retrospectively assessed against NICE TA279.¹

We defined a 'recent' fracture as occurring 6–12 weeks prior to PVP as this allows time for natural bone healing whilst minimising therapeutic delay.¹ 'Optimal pain

management' was defined as analgesia in addition to, or stronger than, paracetamol.

Results: 57 of the 221 PVP performed by MD were for Rheumatology patients. 38 patients were female and 19 were male. They were aged 42–95 years (median 73), and 95% were Caucasian. 26 had taken corticosteroids for more than 6 months.

7 patients received PVP 6–12 weeks after their fracture. 10 patients had PVP within 6 weeks. 39 patients waited 12 weeks or longer due to late patient presentation, slow referral processes, and the time taken to optimise analgesia.

38 (67%) patients received optimal analgesia before PVP.

46 (81%) patients had pain that correlated with the level of vertebral fracture.¹

Following PVP back pain was gone for 9 (16%) patients, improved for 38 (66%), not changed for 4 (7%), and worse for 1 (2%) patient.

Complications included leakage of cement locally (57%) or into local veins (5%). 2 patients had pulmonary cement emboli. One presented with breathlessness and the second was found incidentally. Both recovered with conservative therapy.

Conclusions: In line with NICE TA279, most patients had pain at the level of their fracture and received optimal pain management prior to receiving PVP.

10 patients received PVP earlier than our standard of 6 weeks. However, recent randomised trials suggest that PVP may be beneficial in this group.²

Most (68%) patients received PVP later than 12 weeks but they often found benefit. The VERTOS V trial may help determine the role of PVP for chronic fractures.³

Introducing an osteoporotic vertebral fracture pathway at UHCW will help ensure appropriate management, timely review and, when necessary, prompt PVP.

REFERENCES:

- [1] National Institute for Health and Care Excellence. Percutaneous vertebroplasty and percutaneous balloon kyphoplasty for treating osteoporotic vertebral compression fractures. NICE guideline [TA279] 2013.
- [2] Clark, et al. Safety and efficacy of vertebroplasty for acute painful osteoporotic fractures (VAPOUR): a multicentre, randomised, double-blind, placebo-controlled trial. *The Lancet* 2016;388(10052):1408–16.
- [3] ClinicalTrials.gov [Internet]. National Library of Medicine (US). Identifier NCT01963039, A Trial of Vertebroplasty for Painful Chronic Osteoporotic Vertebral Fractures (Vertos V); 2013 Oct 16. [cited 2018 Jan 29]. Available from: <https://clinicaltrials.gov/ct2/show/NCT01963039>

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2217

THU0488

AGE AT THE TIME OF HIP FRACTURE IN PATIENTS WITH RHEUMATOID ARTHRITIS IS GREATER THAN IT WAS 10 YEARS AGO, BUT IS STILL YOUNGER THAN THAT OF THE GENERAL POPULATION

K. Arai¹, J. Ajiro². ¹Department of Orthopaedics; ²Department of Internal Medicine, Niigata Prefectural Central Hospital, Joetsu, Japan

Background: Niigata Prefectural Central Hospital (NPCH) is the principal hospital of Joetsu and Myoko cities in Niigata Prefecture, Japan. It serves a population of 230,186, of whom 70,205 (30.5%) were aged ≥65 years in 2015. About 90% of patients with hip fractures underwent surgery within 48 working hours after admission in NPCH. Between 50% and 60% of all hip fractures in our region are treated at the NPCH, which employs two rheumatologists and treats 500 rheumatoid arthritis (RA) patients.

Objectives: We sought to identify the characteristics of RA patients with hip fractures, as compared to those of the general population and of RA patients treated 10 years previously.¹

Methods: Between 2012 and 2015, 789 hip fractures were treated at the NPCH. The mean age of these patients was 84±8.0 years. RA patients with such fractures were compared with fracture patients from the general population. We recorded the neck/trochanter (n/t) ratio, age at fracture, disease duration, steroid and anti-osteoporosis drug-use rates, secondary fracture rate, walking capacity after operation, 1 year and 30 day mortality rates, and infection rate, in both current RA patients and those treated 10 years previously.

Results: Eleven RA cases had hip fractures (mean age: 76±7.0 years; all females); 8 had been treated for RA at NPCH. RA patients constitute 1.4% of the general population, and 1.6% of all RA patients treated at the NPCH. Mean RA duration was 23±20 years. The n/t ratio was 1.2. Three cases aged 60–69 years were of the mutilated type and mean RA duration was 35±18 years. Five cases