

## **Editorial IJTON - Should patients be denied access to total joint replacement surgery because they are obese? RFJ (August 2019)**

Since 1990 The World Health Organisation (WHO) has raised concerns about increasing rates of obesity in both children and adults. Once considered a problem only in high income countries, overweight and obesity are now dramatically on the rise in low- and middle-income countries, particularly in urban settings. WHO defines individuals who have a BMI between 25-29.9 as overweight and a BMI of 30 or over as obese. Obesity is subdivided into 3 classes: class 1 BMI 30-34.9, class 2 BMI 35-39.9 and class 3 BMI of 40 or over.

Overweight and obesity are major risk factors for a number of chronic diseases including diabetes, cardiovascular and cancer. In our speciality the impact of overweight and obesity on development of osteoarthritis in load bearing joints is well documented. Increasing numbers of people with severe OA of the knee joint requiring TKR is a global challenge in the developed world with TKR in-patient costs exceeding \$9 billion in 2008 in the USA alone- the highest aggregate cost among the ten procedures for which demand is growing fastest. Between, 2005-2030 the demand for primary TKR in the US is projected to grow by 673% or 3.48 million procedures annually (Tomek et al, 2012).

A Canadian study carried out by Bourne et al (2007) reported obesity was a major factor contributing to development of OA of the hip and knee and related requirement of THR and TKR with risk being 8 times higher for obese people than non-obese people for TKR and 18.73 times higher for people with a BMI between 35-39.9. The average BMI of patients undergoing primary TKR in the UK in 2017 was 30.92 (obese) and 67% of patients who underwent TKR in this year were either overweight or obese (NJR, 2018). This is not a unique situation to England with The New Zealand NJR (2017) reporting the average BMI for patients undergoing primary hip replacement 2010-2016 was 28.92 (overweight) and a range of 14-64.3 and the Swedish knee arthroplasty register (2017) reporting patients undergoing primary TKR in 2017 with a BMI of 35+ ranging from 0-40% across the centres.

A report by The Royal College of Surgeons (RCS, 2016) reported over a third of clinical commissioning groups (CCGs) in England are restricting access to routine surgery such as hip and knee replacements until patients stop smoking or lose weight. The report additionally highlights that 22% of commissioning bodies are placing mandatory weight thresholds on referral for hip and knee replacement surgery. The College said that policies to deny or delay access to surgery for smokers and overweight patients contravened national clinical guidance. In practice these restrictions for referral for THR or TKR vary nationally in the UK and can range from a BMI cut off from 35 to 40.

This raises a number of issues for us to consider such as is there an evidence base to support the restriction of obese and overweight patients undergoing total joint replacements (TJR) and what are the ethical implications of what appears to be a back door approach to rationing health care services.

The evidence base regarding if patient outcomes following TJR are similar between normal weight patients and obese patients doesn't appear to justify denial of surgery to obese patients. A number of studies report equivocal outcomes in terms of relief of pain, improved function and revision rates for obese patients in the short, medium and longer term (Amin et al 2006, Benjamin et al 2009, Bordini et al 2009). Indeed Collins et al (2017) reported obese patients had accelerated improvement in their functional outcome scores compared to non-obese patients in the first 3 months following surgery. A study by Collins et al (2012) carried out in Scotland reported no difference in overall complication rates or implant survival rates up to 9 years post TKR between obese and non-obese patients and concluded that given the sustained relief of symptoms for these patients there was no justification to deny obese patients access to TKR surgery. It would appear to be unethical to deny access to THR/TKR based on BMI when outcomes appear equivocal and indeed the relief of pain and restoration of function and improvement in quality of life are well documented for these procedures. Also if patients are required to lose substantial amounts of weight to meet commissioner's weight restrictions how feasible is this when their mobility is severely restricted by pain because of severe OA of their hip or knee? Patients often experience low self-esteem, social isolation and loss of income due to living with chronic and severe OA of their joints which can lead to depression. This can often lead to comfort eating and this combined with reduced mobility leads to further weight gain.

There is little research to support the best approach to help obese patients lose weight and maintain weight loss prior to and following TJR. A study by Howarth et al (2010) of patients with a BMI of 30 or over with severe OA of their knee/s reported 58% of the respondents had never received help or advice from a health care professional regarding losing weight. A survey of consultant members of the British Association for Surgery of the Knee (Hill et al, 2017) concluded there was considerable variation in the opinions and practices of surgeons on the management of symptomatic knee OA in obesity. It is important that a consistent, evidence based and multi-disciplinary approach is developed to support obese patients with severe OA of their knee/hip to lose weight and maintain weight loss prior to and following TJR. Further research into this area is needed and I am conducting a survey to find out more about the knowledge, skills, attitudes and experiences of nurses supporting obese patients prior to and following TJR. If you would like to participate please either click onto the link below or contact me on [R.Jester@wlv.ac.uk](mailto:R.Jester@wlv.ac.uk) for more information.

## References

Amin A, Patton J, Cook R & Brenkel (2006) Does obesity influence the clinical outcomes at five years following total knee replacement for osteoarthritis? *The Journal of Bone & Joint Surgery (Br)*.8.3.335-340.

Benjamin J, Tucker T & Ballesteros P (2001) Is obesity a contraindication to bilateral total knee arthroplasties under one anaesthetic? *Clinical Orthopaedics and related researcher*.392.190-195

Bordini B, Stea S, Cremonini S, Viceconti M, De Palma R & Toni A (2009) Relationship between obesity and early failure of total knee prostheses. *BMC Musculoskeletal Disorders*.10.29

Bourne R, Mukhi S, Zhu N, Keresteci M & Marin M (2007) Role of obesity on the Risk for Total Hip or Knee Arthroplasty. *Clinical Orthopaedics and Related Research*.465.185-188

Collins R, Walmsley P, Amin A, Brenkel & Clayton (2012) Does obesity influence clinical outcome at nine years following total knee replacement? *The Journal of Bone and Joint Surgery (Br)*.94.10.1351-1355

Collins J, Donnell-Fink L, Yang H, Usiskin I, Lape E, Wright J, Katz J & Losina E (2017) Effect of Obesity on Pain and Functional Recovery Following Total Knee Arthroplasty. *Journal of Bone and Joint Surgery (AM)*.99.1812-8

Hill D, Freudmann M, Sergeant J & Board T (2018) Management of symptomatic knee osteoarthritis in obesity: a survey of orthopaedic surgeons' opinions and practice. *European Journal of Orthopaedic Surgery & Traumatology*.5.967-974

Howarth D, Inman D, Lingar E, McCaskie A & Gerrand C (2010) Barriers to weight loss in obese patients with knee osteoarthritis.*Ann R Coll Surg Engl*.92.338-340

Healthcare Quality Improvement Partnership (2018) National Joint Registry for England, Wales, Northern Ireland and Isle of Man 15<sup>th</sup> Annual Report.

Lund University (2017) Swedish Knee Arthroplasty Register. Elvins Grafiska AB. ISBN 978-91-88017-15-4

New Zealand Orthopaedic Association (2017) The New Zealand Joint Registry: Eighteen year report January 1999 to December 2016

Royal College of Surgeons (2016) Smokers and overweight patients: soft targets for the NHS? The Royal College of Surgeons, England.

Tomek I, Sabel A & Froimson M et al (2012) A collaborative of Leading Health Systems Finds Wide Variations in Total Knee Replacement Delivery and Takes Steps to Improve Value. *Health Affairs*.31.6.1329-1338