

Prostate motion during prostate cancer radiation therapy treatment: does patient BMI have an influence?

Amy Brown,¹ Alex Tan,¹ Scott Cooper¹ and Andrew Fielding²

¹Townsville Cancer Centre, The Townsville Hospital, Townsville, Queensland

²Queensland University of Technology, Brisbane, Queensland

Background/Aims: To determine if the patient's body mass index (BMI) influences the prostate motion during radiation therapy. **Methods:** Image sequences (movie capture mode) were acquired during the left, anterior and right aspects of radiation therapy treatment delivery in 130 prostate cancer patients. Prostate motion was assessed by measuring the displacement of fiducial markers implanted within the prostate. The mean displacements (in left/right (LR), superior/inferior (SI), anterior/posterior (AP) translations and pitch and yaw rotations) were analysed using one-way ANOVA to determine if there was significant difference between BMI categories. **Results:** The sample was representative of population BMIs with 1 underweight, 24 normal, 56 overweight and 49 obese patients (BMI range: 18.22 to 47.00; mean: 29.4). The mean \pm standard deviations across the study population were 0.37 ± 0.83 , 0.34 ± 1.48 , -0.90 ± 1.41 mm in the LR, AP and SI translations, and -1.55 ± 5.38 and -0.28 ± 1.93 degrees in the pitch and yaw rotations. There was no statistically significant difference across BMI categories except in LR ($p=0.003$) and pitch ($p=0.007$). Tukey HSD post-hoc analysis indicated LR difference from overweight to obese (0.575, 95% CI 0.185-0.965), and the pitch difference from overweight to obese (2.921, 95% CI 0.739-5.102) was statistically significant ($p=0.002$ and 0.005 respectively). **Conclusion:** There is no significant relationship between prostate motion and BMI, except in the left/right direction and in pitch. These results support the growing body of evidence that a patient's body habitus is not the main influence on prostate motion.

Limb amputation in Indigenous Australians on renal dialysis: The Townsville Hospital experience

Rajit A. Gilhotra,^{1,2} Beverly T. Rodrigues,^{1,2} Venkat N. Vangaveti², George Kan³, Kunwarjit S. Sangla¹ and Usman H. Malabu^{1,2}

¹Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

²College of Medicine and Dentistry, James Cook University, Townsville, Queensland

³Townsville Renal Service, The Townsville Hospital, Townsville, Queensland

Background/Aims: North Queensland has a high prevalence of diabetes, vascular disease and end stage renal failure (ESRF) requiring renal dialysis, particularly amongst Indigenous Australians. Recent reports have identified dialysis as a risk factor for lower limb amputations; however, no studies have been conducted to explore the differences between Indigenous Australians and the general population. The aim of this study was to document differences between Indigenous Australians and the general population for risk factor of non-traumatic limb amputation in North Queensland. **Methods:** All patients currently attending the Townsville dialysis centre were included in the study. Odds ratio and χ^2 tests were performed to identify variables most strongly associated with amputation. **Results:** A total of 219 patients (114 Indigenous Australians) attended the service. We identified an overall prevalence of limb amputation of 13.7% in patients on renal dialysis (19.3% amongst Indigenous Australians). Indigenous Australians were found to have a higher susceptibility to amputations (RR1.58 [1.27-1.98] $p=0.005$). The major risk factors of amputations in the overall cohort were history of ulceration (OR 81 [18-360.44] $p<0.001$) and presence of diabetes (OR 41 [2.5-682.6] $p=0.009$). **Conclusion:** Indigenous Australians with ESRF on dialysis who have a past history of ulceration and have diabetes mellitus are at higher risk of having amputations compared with non-Indigenous Australians. Primary prevention of diabetes in the sub-population may help in reducing the limb loss. Further prospective studies on a larger population are needed to confirm our findings.

Hypothyroidism in pregnancy: fetal-maternal complications at The Townsville Hospital

Robyn Chadwick,¹ Divya Srivastava,^{1,3} Matthew Winkle,³ Daniel Paul,¹ David Watson,² Kunwarjit S. Sangla¹ and Usman Malabu^{1,3}

¹Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

²Department of Obstetrics and Gynaecology, The Townsville Hospital, Townsville, Queensland

³College of Medicine and Dentistry, James Cook University, Townsville, Queensland

Background/Aims: Untreated hypothyroidism in pregnancy is associated with increased risk of fetal-maternal complications including premature birth, low birth weight, gestational hypertension and miscarriage. However, there is insufficient data on pregnancy outcome in adequately treated hypothyroidism in pregnancy. The aim of the study was to assess fetal-maternal complications in hypothyroid pregnant women at the Townsville Hospital. **Methods:** We collected data by a retrospective chart audit of all the hypothyroid patients who attended the high-risk pregnancy clinic at the Townsville Hospital from 1st January to 31st December 2013. Only patients who were adequately treated with thyroxine and maintained TSH target of <2.5 mIU/L with regular follow up in the clinic were included in the study. **Results:** A total of 73 hypothyroid patients were reviewed. Fifty-two patients were previously diagnosed while 21 were diagnosed with hypothyroidism during the pregnancy period. Mean age in both groups was similar. Interestingly, higher fetal-maternal complications were observed in the newly diagnosed hypothyroid patients compared with previously diagnosed hypothyroid patients: 25 out of 52 (48%) and 14 out of 21 (66.7%) respectively ($X^2=7.13$; $p=0.008$). These complications occurred in spite of the adequate thyroxine replacement. **Conclusion:** We report higher adverse pregnancy outcome in adequately treated newly diagnosed hypothyroid mothers. Our finding suggests early pre-pregnancy screening for hypothyroidism may lead to a reduction in fetal-maternal complications in high risk subjects. Further prospective studies on a larger population are needed to verify our findings.

Patients prefer being in a single room even if they do not know they have an infection

Kathleen McLean,¹ Janine Carrucan,¹ Sharon Trait,¹ Mandy Davidson,¹ and Wendy Smyth²

¹Infection Prevention and Control Unit, The Townsville Hospital, Townsville, Queensland

²Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service, Townsville, Queensland

Background/Aims: The literature reveals negative psychological impacts on patients who are isolated in single rooms because of infections. It was proposed that a lack of infection control education was a potential contributor to decreased satisfaction and increased anxiety amongst such patients. The aim of this study was to identify whether providing information brochures to infectious patients that are isolated in single rooms improves the patient experience. **Methods:** A convenience sample of 34 medical/surgical patients who were isolated in single rooms during the month of February 2013 was interviewed by infection control nurses. Between March and June 2013, ward nursing staff were asked to provide an information brochure for patients isolated in single rooms because of infections. From July 2013, 24 patients in single rooms were interviewed in a similar way as previously. **Results:** Pre-intervention, the majority of patients ($n=23$) knew they were in a single room due to infections, preferred being in a single room ($n=25$), and understood why staff wore personal protective clothing prior to entering their room ($n=32$). Post-intervention, fewer patients knew why they were being isolated, yet the majority ($n=15$) preferred the quietness of a single room. Only two-thirds of patients ($n=16$) were given the information brochure. **Conclusion:** Education pertaining to infection control is not easily delivered by ward nurses. There is clearly an opportunity for infection control