THE EFFECT OF CHEMOTHERAPY ON COGNITION IN PATIENTS WITH AND SURVIVORS OF COLORECTAL CANCER

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October, 2013

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ABSTRACT

This thesis has explored the phenomenon that has been described as chemotherapy-related cognitive impairment (CRCI), both in the wider cancer patient population, as well as looking specifically at patients being treated for colorectal cancer. CRCI refers to the situation in which treatment with chemotherapy for cancer leads to a subsequent decline in the cognitive functioning of affected patients, evident in both self-report data and the results of psychological testing.

Four studies have been completed. The first study was a meta-analysis of the literature published up until 2010, which investigated the effect of treatment with chemotherapy on cognitive functioning across a number of different types of cancer. This study found that, although CRCI has been well documented as occurring in patients treated with chemotherapy for breast cancer, research is lacking in relation to other types of cancer, in particular colorectal cancer. This outcome justified the research that followed; the specific focus of which was to evaluate the effect of chemotherapy on cognition in patients with colorectal cancer.

Following the meta-analysis, a primary research study was conducted to assess the effect of chemotherapy on cognition in patients treated for colorectal cancer. This study comprised four sample groups, all of whom, with the exception of healthy, age-matched controls (n = 20), had been diagnosed with colorectal cancer: participants who have been treated with chemotherapy (n = 19), participants who received treatment with the anti-vascular drug Avastin (n = 12) and participants who have received only surgery (n = 10). Results supported previous reports that cognitive impairment may occur in patients treated for cancer, however suggestions that chemotherapy impacts cognition more than other forms of treatment was not

supported by the results, with the surgery patients being the only group to be significantly different in their cognitive performance from the healthy controls.

The next study (Study 3) investigated the relationship between subjective and objective measures of cognitive functioning in colorectal cancer patients. In general, the results revealed that patient perception of cognitive functioning was not significantly related to performance on objective cognitive tests, with the possible exception being tests of memory, indicating that a discrepancy may exist between objectively and subjectively measured CRCI. Depression and anxiety were negatively related and emotional wellbeing positively related to subjective reports of CRCI.

Study 4 (Chapter 5) aimed to assess whether locus of control, optimism / pessimism and depression influence recall of cognitive functioning after cancer treatment among colorectal cancer survivors. Two different groups were included in the sample: survivors of colorectal cancer (n = 88) and their spouses (n = 40). Recall of cognitive difficulties after cancer treatment was validated through significant correlation with recall of the participants' cognition after treatment, provided by their partners. Significant positive relationships were established between internal locus of control, optimism and perceived cognitive functioning and a negative relationship for depression. Regression analyses revealed that after controlling for depression, internal locus of control and optimism/pessimism contributed very little to the survivors' recall of cognitive functioning after cancer treatment. However, it was proposed that depression may moderate the relationship between internal locus of control and recall of cognitive functioning; hence if depression were to be treated, it is possible that internal locus of control would significantly contribute to recall of cognition after treatment. This was not the case for optimism/pessimism. These results were discussed in terms of their importance for researchers and clinicians alike. The

treatment experience of cancer patients and survivors must be considered in light of their level of depression and the extent to which they demonstrate an internal locus of control. Where depression is high, recall of cognitive impairment associated with treatment may be impacted.

DECLARATION

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Kristy Giles

October, 2013.

ACKNOWLEDGMENTS

I would like to start off by thanking my three supervisors, Carlene, Ted and Amanda for all of their help and invaluable advice throughout my PhD candidature. Thankyou also to Dr Ganessan Kichenadasse for assisting with referral of patients to the studies; this would not have been possible without your help.

Thank you to my friends Amy, Lizzie, Megan and Tanya for taking an interest and giving me an opportunity to talk about my research. I would also like to thank my fellow PhD candidates Adella, Emma and Nadja for providing support from the beginning. Our catch-ups reassured me that I was not alone in both the good and bad times of my candidature.

I would also like to thank Mum, Dad and Amanda for their ongoing love and support both during my PhD and always. You pushed me when I needed motivation and encouraged me to take a break when I was stressed. For that, I am grateful.

Finally to Trent, you are my best friend and have given me so much support over the last few years. You have experienced all of the ups and downs with me; I love you and am so lucky to have you.