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SCCANZ Skin Cancer Conference Abstracts 2011

Serial Dermatoscopic Monitoring and Melanoma Breslow Thickness in a Primary Care Skin Cancer Clinic – a Pilot Study

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Introduction: Serial dermatoscopic monitoring of pigmented skin lesions may introduce a delay in diagnosis of melanoma. Conversely it is argued that feature-poor melanomas may not otherwise be diagnosed without a large increase in biopsy rates. This study compared average Breslow thickness of melanomas that have been serially monitored with those that have not.

Method: A retrospective analysis of a clinical audit of all histopathologically confirmed melanomas detected over a two-year period in a primary care skin cancer clinic was performed. Data collected included patient age and sex, date of first monitoring, date of decision to biopsy, Breslow thickness, and histopathologic diagnosis. Lesions judged to be dermatoscopically borderline for melanoma were serially imaged using a MoleMax I (Derma Instruments, Austria). Monitored lesions were reviewed at three months and then on subsequent patient review throughout the normal course of their care. Incidences of in-situ lesions and averages of Breslow thickness of monitored and unmonitored lesions were calculated and compared.

Results: A total of 90 melanomas were detected. 26% were invasive, with an average Breslow thickness of 0.9 millimetres. 33 melanomas had been monitored and 27% of these were invasive with an average Breslow thickness of 0.33 millimetres. 57 melanomas were not monitored and 26% of these were invasive with an average Breslow thickness of 1.2 millimetres. There was no significant difference in the proportion of in-situ lesions detected. Monitored lesions which were invasive were significantly thinner ($p < 0.04$; $z = -1.743$; Two Independent Sample Wilcoxon Rank Sum Test). Only 7/33 (21%) of monitored melanomas showed change at three months.

Conclusion: In a small single centre study, the use of monitoring to detect melanomas resulted in a similar proportion of in-situ melanomas and did not result in an increase in Breslow thickness of invasive melanomas at time of excision, compared with unmonitored lesions. This may be because borderline lesions are detected earlier in their evolution, or may be inherently slower growing. A monitoring interval of 3 months may not be sufficient to detect change in borderline lesions. A further larger study is required to confirm these findings.

Malignant zo Benign Ratio of Skin Biopsies: A Retrospective Study of an Australian Public Hospital Dermatology Department

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Introduction: Accurate identification of malignant lesions is important for patient safety as well as reducing the number of benign lesions removed and thus reducing costs and work-

load. By quantifying malignant to benign biopsy ratios at this point in time we can see if current methods have improved the accuracy of diagnosis. This also helps effectively assess the impact of new vectors in skin cancer diagnosis when they are introduced.

Methods: 6546 biopsies/excisions were performed in an 18-month period from July 2010 until December 2011 in the Dermatology OPD at a Tertiary Teaching Hospital. Dermatology Registrars and Consultants were involved in assessing lesions for biopsy.

Results: The Biopsy to Treatment Ratio (BTR) was calculated as the total number of biopsies divided by the number of non-melanoma skin cancers identified. The BTR of 1.97 indicated about one in two biopsies identified a skin cancer. The ratio of melanoma to nevi was 1:6.4 (55 melanomas were diagnosed). The ratio of melanoma to benign pigmented lesion was 1:14.7 giving a Number Needed to Treat (NNT) of 15.

Discussion/Conclusion: A previous study[1] of skin cancer clinics in Australia reported NNT as 29 and BTR of 3. NNT in this study may be lower because benign lesions referred only to pigmented, not non-pigmented lesions. Biopsies in this study were for many different conditions not just suspected skin cancers and thus the BTR would be lower if only suspected skin cancers were included. The melanoma to nevi ratio in this study is better than 1:15.5 reported previously in a small study using digital dermoscopy to monitor high risk patients[2]. In a study[3] of fully qualified dermatologist who all used dermoscopy, melanoma to nevi ratios were 1:4.3. This suggests more experience and stringent use of dermoscopy could improve biopsy accuracy.

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Intravenous Sedation for Skin Cancer Surgery

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Introduction: Skin cancer surgery is usually performed under either local or general anaesthetic. In our hands the use of intravenous sedation combined with local anaesthetic has both greatly increased the acceptability of local anaesthetic as well as decreased the need for general anaesthetic. This paper describes the accreditation requirements for the use of sedation and local anaesthetic in skin cancer surgery, our set up, technique, and monitoring for nurse sedation as well as staff training and approximate set up costs.

Method: 10-year retrospective audit of skin cancer surgery intravenous sedation cases in a private clinic. All sedation cases had a 'Sedation Audit Form' completed

Results: During the last 10 years we have performed over 3000 operations for skin cancer with 28% done under local, 68% sedation & local and only 2.6% under general anaesthetic. Sedation is usually used for multiple and more complex procedures with 80% of our flaps and 85% of skin grafts being done under sedation. There were no deaths, no respiratory arrests, no cardiac arrests, no patients needing transfer to an overnight facility and a minor complication rate of less than 0.5%. Most patients were recovered and discharged within an hour of their procedure's completion with less than 0.1% requiring more than two hours of recovery for sedation reasons. Adding sedation to local increases the cost of surgery with us by approximately $275 but is $1100–1500 less expensive than the same procedure under GA.

Conclusion: Properly carried out, intravenous sedation is a safe and cost effective procedure in the ambulatory surgical management of skin cancer.

Photoprotective Effects of Carrageenan against UVB-Irradiation in Human Keratinocytes Hacat Cells

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Introduction: kappa (k), lambda (l), and iota (i) carrageenans, are sulphated polysaccharides inthe cell wall of red seaweeds mostly of genera Chondrus, Eucheuma, Gigartina and Iridae. They are widely used as an excipient of skincare products but their biological activity has not been investigated extensively. Our previous findings indicated that carrageenans were non-toxic tomurine normal fibroblasts (3T3) and were able to reduce UVB-induced cell killing while interestingly reverting necrotic death to apoptosis. In this study, we aim to elucidate the protective mechanism exerted by carrageenans in human keratinocytes cells, HaCat.

Methods: Cytotoxicity of i(II), i(IV), l, k-carrageenans was determined against HaCat cells using the colorimetric MTT (3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) assay. Photoprotection by the carrageenans was monitored 24- and 72-hours after UVB irradiation by the reduction of cell killing in carrageenan-pretreated HaCaT cells. DPPH [1,1-Diphenyl-2-picrylhydrazyl] Radical Scavenging Assay was performed to deduce if its photoprotective activity was mediated by the presence of sulphur moieties in carrageenans.

Results: Carrageenans were relatively non-toxic to HaCat cells as the CD50 values were not apparent at <10µg/ml. Photoprotection was significant especially by i(II) against 50mJ UVB up to 72 hours after irradiation. However, there was no correlation between the number of sulphate groups present in different types of carrageenan with its photoprotective potential.

Conclusions: Carrageenan showed photoprotective potential against UVB as seen in with i(II) indicated the highest potency. Results of radical scavenging activities suggest that the photoprotective mechanism was not dependent upon the presence of sulphur moities. We believe that the insights in this study have the potential of refining and adding new knowledge on the mechanism of action of the photoprotective effect of carrageenan. Photoprotective role by carrageenans offers an enhanced value of skincare products when they work synergistically with the other active constituents.