

## **Incidence rates of Keratinocyte Carcinoma (KC) in survivors of childhood and adolescent cancer: A report from the Childhood Cancer Survivor Study (CCSS)**

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Skin cancer has been associated with exposure to ionizing radiation, but the incidence rate of KC in survivors of childhood cancer has not been reported. The CCSS is a retrospective cohort study designed to determine late effects in children and adolescents diagnosed with cancer. Eligibility criteria for the cohort are: subjects diagnosed between 1970-1986 at one of 25 consortium centers, before 21 years of age, and survived at least five years after diagnosis. In CCSS, KC is the most frequently occurring subsequent malignancy, accounting for 41% of all confirmed subsequent cancers. Among the 13,132 CCSS participants, 213 cases have reported 615 pathology confirmed occurrences of KC of the skin. Of these, 97% were basal cell carcinoma (BCC). Multiple occurrences were seen in 94 (44%) of cases; 69 had 2-4 KC, 25 had 5 or more KC. The incidence rate of BCC was 168.4, 1449.3, and 3785.9 per 100000 person years (PY) for survivors who were < 35, 35-44, and 45-54 years of age respectively. The incidence rate in CCSS was greater than what was seen in a comparable time period in New Hampshire (NH)\*, with survivors less than 35 years of age having almost 19 times the incidence rate seen in NH. Survivors aged 35-44 had incidence rates comparable to NH residents who were 75+ years of age. Review of the radiation (RT) records found that 91% of the KC occurred within the previous RT fields. The overall incidence rate of BCC in irradiated cases was 350.1 compared to 22.9 per 100000 PY for non-irradiated cases. Incidence rates also increase with time from original cancer diagnosis, with rates of 73.8, 534.1, and 1789.1 per 100000 PY for 5-15, 15-24, and 25+ years respectively. Further research is needed to determine whether there is an additive effect between RT exposure and known risk factors such as sun sensitivity and sun exposure.

\* Karagas MR et al. Int J Cancer. 1999; 81: 555-559