Title: Long term hair loss in patients with early breast cancer receiving docetaxel chemotherapy

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Body: Background
There is increasing recognition that a small number of patients receiving docetaxel-containing regimes for early breast cancer (EBC), experience permanent alopecia. However, there is little data to inform discussions with patients regarding this serious late side effect. The aim of this study was determine the incidence, the site, the extent, and duration of the hair loss.

Methods
A postal questionnaire was sent (in October 2013) to patients who had received docetaxel during 2010, in the neo/adjuvant settings for EBC at our regional cancer centre. This comprised questions relating to scalp hair loss (using the Ludwig scale to provide a pictorial description of the pattern of hair loss), hair loss to other parts of the body, hair products used, and any comments that the respondents wished to add about their experience of hair loss. Univariate and multivariate analyses were undertaken to determine any other risk factors for persistent alopecia.

Results
134 of 189 (71%) questionnaires were returned. Of those responding, 72 patients were pre-, 10 were peri- and 52 post-menopausal. 26 patients were taking anastrazole, 14 letrozole, 74 tamoxifen and 20 no adjuvant hormones. Of the respondents, 99 (74.4%) patients had no significant scalp hair loss, and 21 (15.8%) had significant scalp hair loss. 13 (9.8%) of patients gave equivocal responses and 1 patient did not answer the scalp hair loss question. 16 patients in the study were using products such as wigs and hair extensions. 5 patients reported no regrowth of eyebrows, 2 patients reported no eyelash regrowth, 6 no regrowth of nostril hair and 14 no regrowth to other parts such as legs. Univariate and multivariate analyses showed no significant associations with other patient and treatment characteristics (eg adjuvant endocrine therapy). Patients’ observations regarding the social and emotional consequences of permanent hair loss confirmed a significant impact on quality of life.

Conclusions
This retrospective questionnaire study confirms that long term significant scalp alopecia (here lasting for up to 3.5 years following completion of chemotherapy) may affect 10-15% of patients following docetaxel for EBC (taking into consideration a potential bias for no hair loss in the non-responders). This rate is higher than previous estimates. Long term hair loss to other parts of the body was also widely reported. This appears to be unrelated to other patient and treatment characteristics. Long term hair loss had a significant impact on quality of survival. This is an important quality of life issue for patients which merits prospective study to confirm incidence, to identify effective preventive and management strategies. This risk should be discussed routinely (as part of the process of informed consent) with all patients embarking upon docetaxel as a component of management of EBC.