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Anal cancer

Faecal incontinence after chemoradiotherapy in anal cancer survivors: Long-term results of a national cohort

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ABSTRACT

Purpose: To examine the prevalence and severity of faecal incontinence amongst anal cancer survivors after chemoradiotherapy.

Material and methods: Anal cancer survivors from a complete, unselected, national cohort, minimum 2-years follow-up, were invited to a cross-sectional study. The St. Mark's incontinence score was used to evaluate occurrence and degree of faecal incontinence the last four weeks. The results were compared to age- and sex-matched volunteers from the general population.

Results: Of 199 invited survivors and 1211volunteers, 66% and 21%, respectively, signed informed consent. The survivors had significantly higher St. Mark's score than the volunteers (mean 9.7 vs. 1.1, $p < 0.001$). Incontinence of stool of any degree was reported by 43% vs. 5% (OR 4.0, CI 2.73–6.01), and urgency was reported by 64% vs. 6% (OR 6.6, CI 4.38–9.90) of the survivors and volunteers, respectively. Only 29% of those with leakage of liquid stool used constipating drugs. Survivors of locally advanced tumours had a higher incontinence score ($p < 0.01$).

Conclusions: Moderate to severe faecal incontinence is common amongst anal cancer survivors. Post-treatment follow-up should include the evaluation of continence, and incontinent survivors should be offered better symptom management and multidisciplinary approach if simple measures are insufficient.

Squamous cell carcinoma of the anal region is a rare malignancy with an incidence of approximately 1 in 100,000 per year [1]. In Norway, 50–60 patients are diagnosed per year. In a recent study of Norwegian anal cancer patients treated with chemoradiotherapy (CRT), the 5-year cancer-specific survival was 75% [2]. Although the treatment is effective, a substantial proportion of the survivors reported impaired long-term health-related quality of life (HRQOL) with high symptom scores from the pelvis, such as diarrhoea and sexual dysfunction [3]. High symptom scores for faecal incontinence suggested that this was a major patient-reported problem.

Faecal incontinence is a well-known late effect after pelvic radiotherapy, but prevalence varies widely, with rates ranging from 3% to 53% [4]. Recent published data from smaller studies of long-term HRQOL of survivors after anal cancer have reported a high frequency of difficulty in bowel control that might impact on daily life [5–7]. Larger studies are available for survivors after radiotherapy for other pelvic malignancies [8–10], indicating that faecal incontinence after pelvic radiotherapy represents a frequent problem. The prevalence of faecal incontinence depends on the criteria used and the heterogeneity of the patient cohort. The use of standardised methods enables cross-study comparisons. In this study, the St. Mark's score was used to evaluate faecal incontinence [11].

The aim of this study was to examine the prevalence and severity of faecal incontinence in the long-term follow-up of anal cancer survivors after curative CRT.

Materials and methods

Anal cancer survivors

A cohort of all patients diagnosed in Norway between July 2000 and June 2007, with squamous cell carcinoma of the anal region and treated with curatively intended CRT, was included in a national study [2]. Curative treatment of anal cancer was centralised to five centres. All centres participated in the study. Patient, tumour and treatment characteristics were registered in a national database. Survivors without any sign of disease recurrence, with

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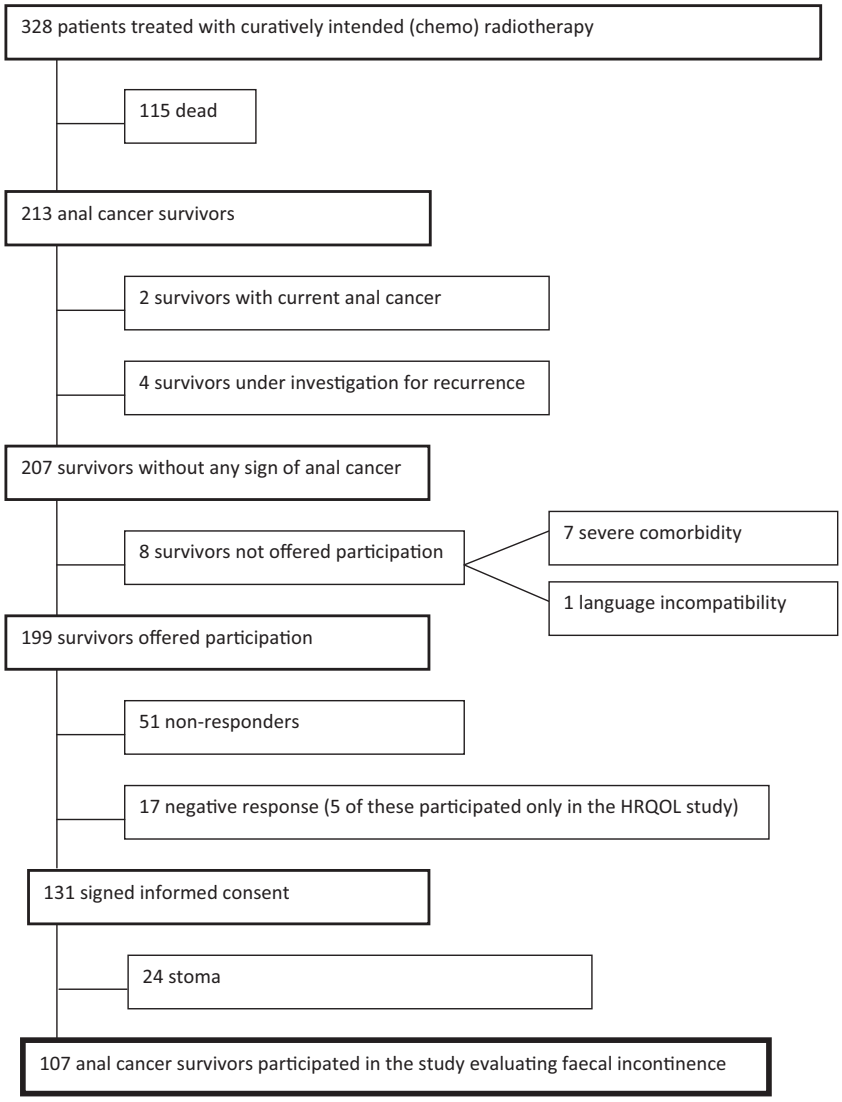

Fig. 1. Inclusion of survivors.

a minimum follow-up of 2 years after diagnosis, $n = 199$, were contacted by mail in the period August 2009 to March 2010, and invited to participate in a cross-sectional survey. Non-responders were reminded twice. Inclusion of survivors is shown in Fig. 1.

Volunteers

The survivors' scores were compared to scores from a group of volunteers from the general population, age- and sex-matched at the time of the follow-up study. These were randomly drawn from the National Population Register and invited by mail to participate. The invitation included the information that any history of cancer in the pelvis or abdomen would exclude participation. To obtain a twofold number of volunteers compared to the number of cases in each sex- and 10-year age group, repeated random draws were done.

Treatment of anal cancer

According to national guidelines during the study period, the recommended radiation dose was 54–60 Gy and either one course of Mitomycin-C in combination with 5-Fluorouracil (5-FU) or three courses of Cisplatin in combination with 5-FU according to tumour stage. CT-based 3D treatment planning was used in some and gradually introduced in all centres in Norway during 2000–2002. Radiation was mostly delivered with a 2–4-field technique and 6–18-MV photon beams. Detailed information about the treatment is presented in a previous paper [2].

Measurements

This cross-sectional survey consisted of a structured telephone interview, performed by trained health personnel during the period September 2009 to August 2010. There was a fixed set-up of pre-defined questions, amongst them questions regarding socio-demographics, comorbidity (diabetes mellitus, chronic inflammatory bowel disease, and cardiovascular disease), smoking habits, and the St. Mark's score of faecal incontinence. Time for the interview was agreed upon in advance. The interview lasted approximately 15 min. In addition, the participants completed a HRQOL questionnaire, the European Organization of Research and Treatment of Cancer (EORTC) core questionnaire, QLQ-C30 version 3.0 [12], received by mail. The full results of HRQOL are presented in a recent published paper [3]. The age- and sex-matched group of volunteers went through the same interview and completed the same questionnaires as the survivors.