Discontinuation of anti-cancer drug therapy near end of life in patients with advanced disease – a retrospective cohort study at a single institution in Norway

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Background: Patients with incurable locally advanced or metastatic cancer often receive various lines of palliative anti-cancer drug therapy, which is probably used too generously to patients towards the end of life (EOL). Most guidelines recommend that patients with World Health Organization Performance Status (WHO PS) 3 or 4 should not receive chemotherapy. Treatment in the last month of life is with few exceptions considered futile with the risk of reducing both quality of life and survival.

Aims: The aim of this study was to investigate how anti-cancer drug therapy is given at the EOL in patients treated at the Dep. of Oncology at Haukeland University Hospital Bergen (HUS), Norway. The main questions were:

1) How often is anti-cancer drug therapy (chemotherapy, immunotherapy, targeted therapy, endocrine therapy) given within the last month of a patient´s life?
2) Do oncologists at our institution follow guidelines to avoid treatment near EOL?
3) Are tumour characteristics, social aspects and inadequate palliative care support associated with more aggressive treatment towards EOL?

Methods: This study was conducted as a retrospective single center cohort study. Patients who had had contact with the Dep. of Oncology HUS between 1Oct and 31 Dec 2016 with recorded death date up until 31 Dec 2017 were identified (435 patients). Currently, data from hospital medical records of the first 183 patients (birth dates between 01 and 13) have been collected. Of these, 16 were excluded as treatment either was given with curative intent, or, since they only received radiotherapy at the Dep. of Oncology HUS while anti-cancer drug therapy was administered at other departments or institutions (i.e. patients with lung cancer and gynecologic or hematologic malignancies). The remaining 167 patients were included in this analysis, using the statistical program SPSS Version 24 for evaluation of data. The study was approved by the Regional Committee for Medical and Health Research Ethics in Western Norway.

Results: Median age was 72 years (range 31-97) and 108 patients (65%) were male. The most frequent cancer types were prostate (17%), colorectal (16%), CNS (9%), pancreas (8%), breast (7%) and melanoma (7%). Median time between last treatment administration and death was 66 days (range 2-1033) and median (mean) number of palliative lines was 1 (1,7; range 0-9). Chemotherapy was the most frequently used last treatment regimen (47%) followed by endocrine therapy (10%) and targeted therapy (6%). No patient was defined as WHO PS 3 or 4 at start of last treatment line or cycle, however, in >50%, WHO PS was not documented.
17 patients (11%) received anti-cancer drug therapy within their last month of life. There was no statistically significant difference regarding cancer type, age, gender, relationship status, children status and contact with a palliative care team between the patients who had received treatment during their last month of life and those who had not, although a trend towards higher treatment probability in breast cancer and melanoma was observed (29% and 27%, respectively), p=0.078.

Discussion: Previous studies from other institutions reported that 5-32% of cancer patients receive palliative anti-cancer drug therapy during their last month of life. However, comparison between studies is difficult due to different inclusion criteria and varying types of anti-cancer drugs to be analyzed. Our study population included patients that had not received any anti-cancer drug therapy at all; those receiving anti-cancer drugs other than traditional chemotherapy, as well as participants in a clinical study.

Conclusion: Few patients received anti-cancer drug therapy towards EOL at our institution. WHO PS status was rarely documented when starting last treatment regimen. Interestingly, contact with palliative care team did not seem to influence on the aggressiveness of anti-cancer drug therapy towards EOL.