Notes about Oncology paper

A long-term follow-up study reported 11 years after the original study (ref. 5)
Evidence (ref. 13–14), which became available after ref. 5 was published, seems to have given the authors reason to reanalyse the data from ref. 5.

Abbreviations

AC: 4 cycles of iv doxorubicin 60 mg/m^2 and cyclophosphomide 600 mg/m^3
DDC: dose dense chemotherapy
DFS: disease-free survival
DLCO: carbon monoxide diffusing capacity
DRDI: DDC-related DLCO injury, i.e. maximal DLCO reduction of more than 20 %.
P1–P4: P1 baseline, before DDC; P2–after AC; P3–after T; P4–long-term follow-up at different times
PFT: pulmonary function test
P1 PFT: PFT taken at the time P1
T: growth factor support every 14 days followed by 12 doses of weekly iv paclitaxel 80 mg/m^2
QoL: quality of life

Definitions

Anthracyclines: a class of chemotherapeutic drugs extracted from Streptomyces bacterium; e.g. doxorubicin
DLCO recovery in the follow-up cohort: difference in percentage from baseline between the DLCO value at P4 and the lowest DLCO value at either P2 or P3.
Taxanes: *cytoskeletal disruptors or microtubule-targeting agents*: *a* class of diterpenes; e.g. paclitactel. In the nucleus of the dividing cell, they bind to the microtubules and stop reproduction.

Alternative title

Pulmonary diffusion capacity in breast cancer patients treated with dose-dense chemotherapy—long-term prospective follow-up of pulmonary and oncological outcomes

Alternative introduction

Commonly used breast cancer treatment—DDC protocols (AC-T regimen)[10,11] combined with growth factor support and radiotherapy—is associated with diverse short- and long-term sequelae for various reasons.

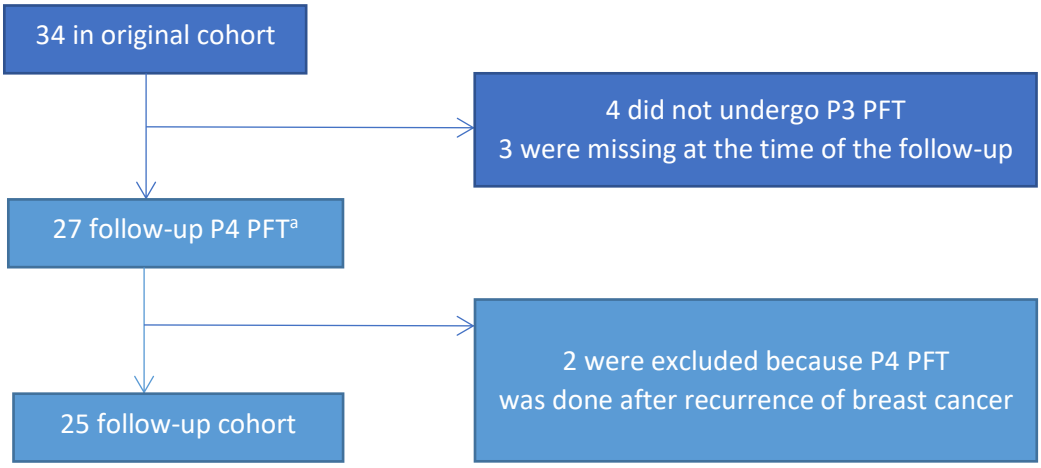
Paclitaxel may cause pulmonary toxicity such as pulmonary infiltrates and hypersensitivity reactions and, in rare cases, pneumonitis (23, 24). A by-product of cyclophosphamide (acrolein) is known to cause oxidative stress, apoptosis and necrosis through interference with the antioxidant system of tissues. Growth factor support is known to exacerbate chemotherapy-related pulmonary toxicity through activation of neutrophils and proinflammatory cytokine response.[22] To reduce radiation to the lungs, CT-planning is required to among other things keep the number of lymph node fields at a minimum.[17] Among breast cancer survivors, the single sequela which mostly affects QoL is fatigue;[4] possibly caused by mild persistent pulmonary injury from either chemotherapy, radiotherapy or both.[2,5]

Pulmonary injury is typically measured by the single breath technique as carbon monoxide diffusing capacity (DLCO). DLCO values vary greatly (16 % intersession variability)[14] and should at the time of testing be corrected for hemoglobin level and be recorded as a percentage of the predicted value based on height and age.[13] Predicted values could e.g. be based on the regression equations of the European Community for Coal and Steel.[12] DLCO values are known to decrease after chemotherapy (ref) but can be reduced for other reasons, e.g. old age.

We[5] *(and others?)* have shown that, in breast cancer patients, the widely used DDC protocol reduces DLCO during treatment. Yet, few *if any (ref. 15–16?)* studies contain long-term results after standard DDC procotol(s) or DLCO values reported in the recommended way.[13,14] In this follow-up of our DDC cohort,[5] our aim was to document long-term outcomes—pulmonary and oncological—as well as impact of treatment and patient characteristics on DLCO recovery.

Figure which could be included in the results section

Figure X Flow of patients from the original to the follow-up cohort



[a]Included after a median of 27 months (range 8–97) from onset of DDC