

## Optimized Patient-trajectory for patients undergoing treatment with high-dose chemotherapy and Autologous Stem-Cell Transplantation

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The study is ongoing  
Expected completion 2014



# Introduction

HD-ASCT

12 weeks of initial treatment

Variation in trajectories

Side effects

Admission period 3-6 weeks

Loss of physical function

Rehabilitation and return to work

# Fast-track trajectory

Fast-track multimodal recovery program

Improve patient trajectories

Patient information

Logistics

Pain treatment

Postoperative physical rehabilitation

→ Decreased length of hospital stay without increased risk of complications

# → Optimized Patient-trajectory

Multidisciplinary action

New procedure guidelines

Quick-guide to doctors

Early detection of side-effects

Pain management

Physical exercise

Increased focus on mobilization by nurses

Rehabilitation in the local municipality

# Aims:

- 1) Investigate whether an exercise intervention, as part of a fast-track trajectory, before, during and after HD-ASCT, was feasible and safe for patients
- 2) whether the patients were able to comply and adhere to the exercise intervention.
- 3) Upon completion of the study, benefits and harms of strength- and cardiovascular exercises before, during and after HD-ASCT, combined with increased basic mobility administered by nurses during admission, will be analyzed.

## Material and methods

Prospective single-center feasibility study with consecutive inclusion of adult patients diagnosed with lymphoma or multiple myeloma referred to HD-ASCT from June 2013 to July 2014 (N=40).

The patients were screened for osteolytic foci or other precautions or contraindications for participating in the exercise intervention by the consulting hematologist.

Patients were excluded from the study if HD-ASCT was cancelled due to progression of disease or other severe co-morbidities.

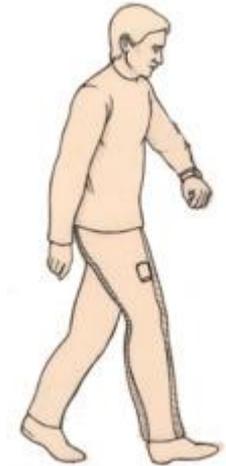
## Control group

Prior to the study 14 patients receiving salvage treatment followed by HD-ASCT were tested similarly to the intervention group and received usual care

Duration of hospital admission and frequency and duration of complications was compared with historic data from 2011 at the same department and hospital

# Outcome measures

- Six Minute Walk Test (SMWT)
- Astrand-Rhyming cycle ergometer test
- Sit To Stand test (STS)
- Maximal isometric voluntary contraction test of knee extensors, w. handheld dynamometer
- motivation, adherence, duration of hospital stay, general physical activity(Active PAL) and complications during HD-ASCT



Icek Ajzen TPB 1985

Intention

Self-efficacy

Perceived behavioral control

Instrumental attitude

Affective attitude

Injunctive norm

Descriptive norm

Motivation, compliance,  
adherence, outcome and

Changes over time

## Theory of Planned Behavior



# Baseline assessment and follow-up

TEST 1	TEST 2	TEST 3	TEST 4
3 x aerobic exercise 2x resistance training pr. week stretching	3 x aerobic exercise 2x resistance training pr. week stretching	3 x aerobic exercise 2x resistance training pr. week stretching	3 x aerobic exercise 2x resistance training pr. week stretching
<p><b>Pre-habilitation</b></p> <p><b>Self-training program</b></p>	<p><b>Admission HD + ASCT</b></p> <p><b>Supervised group training</b></p>	<p><b>Discharge/ Rehabilitation</b></p> <p><b>Self-training program + Rehabilitation plan</b></p>	<p><b>Rehabilitation</b></p> <p><b>Training in local municipality</b></p>

# Screening

Contraindications for physical testing or participating in an exercise session:

- Platelet count  $< 15 \times 10^9 /L$
- Hemoglobin  $< 5,0 \text{ mmol/L}$
- Systolic blood pressure  $< 95 \text{ mm Hg}$
- Fever was only a contraindication if the patient was affected in a general way.

# Out-patient exercise

- Self-training program covering strength and cardiovascular exercise
- Exercise program for patients without osteolytic foci or bone metastasis
- Exercise program for patients with risk of fracture
- Borg scale
- Exercise diary
- Weekly telephone call from the physiotherapist

# In-patient exercise

- Supervised group exercise session 30-45 minutes
- Disconnected from IV transfusions
- Cardiovascular exercise 3 days a week 14-18 Borg
- Strength training 2 days a week 6-12 RM
- Reduced intensity program, 14-16 Borg, 18-25 RM
- Warm-up and cool-down periods were 5-10 minutes
- Focus on basic mobility administered by nurses

# Preliminary results

- 19 patients showed a mean weekly attendance to exercises of 3-5 days. MM=L
- No adverse events have been registered
- Preliminary results showed that the exercise intervention was feasible and safe.
- Upon completion of the study we want to further analyze physical outcomes and motivational factors.

# Perspectives

- A physical exercise intervention as part of a fast-track trajectory as known from the areas of surgery seems applicable in the medical field and may therefore show the same benefits regarding duration of hospital stay, complications and physical function thus facilitating patients return to daily life faster.
- The interdisciplinary approach is crucial in order to achieve a successful implementation in the clinic
- Physical exercise with osteolytic foci and bone metastasis

# Acknowledgements

## Optimized Patient-trajectory for patients undergoing treatment with high-dose chemotherapy and Autologous Stem-Cell Transplantation

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Thank you for your attention

