

Can patient education focused on coping with pain facilitate return to work and everyday life following lumbar spinal fusion surgery?

Submission date	Recruitment status	<input type="checkbox"/> Prospectively registered
12/12/2013	No longer recruiting	<input checked="" type="checkbox"/> Protocol
Registration date	Overall study status	<input type="checkbox"/> Statistical analysis plan
15/01/2014	Completed	<input checked="" type="checkbox"/> Results
Last Edited	Condition category	<input type="checkbox"/> Individual participant data
25/05/2016	Musculoskeletal Diseases	

Plain English summary of protocol

Background and study aims

Lumbar spinal fusion surgery (LSF) is a commonly offered treatment for chronic and severe back pain when other treatments have failed. In the past two decades the number of people undergoing LSF has been rapidly increasing in western countries, with the largest increase seen in the USA. This means that both the costs and the risk of adverse events and complications are increasing too. This may be justified if the benefits of the procedure are greater than the risks and costs. However, despite many years of research in this field, some speak in favour of conservative treatment in the shape of cognitive-behavioural therapy (CBT) for chronic low back pain (CLBP), whereas some conclude that surgery is better. Very few have examined whether a treatment strategy combining CBT with LSF can result in an altogether added effect for CLBP patients undergoing surgery. An additional two factors seem to be important in successful rehabilitation of surgically treated CLBP patients. The first is that the (CBT) rehabilitation should be managed by a team of health professionals with different professional backgrounds (e.g., doctor, therapist, social worker). The second concerns the timing of rehabilitation. Most often rehabilitation starts after surgery, but research points to the fact that if patients are well prepared before going to surgery, they may be discharged from hospital faster. The aim of the study is to examine whether patients participating in patient education focusing on pain behaviour and pain coping (CBT intervention) will be discharged from hospital faster, will have less disability and pain after 1 year, will have less sick leave and faster return to work in the first year following surgery, and will be less costly to the health system and society in the first year following surgery.

Who can participate?

Patients aged between 18-64, scheduled for LSF surgery due to CLBP, with a diagnosis of degenerative disease and the ability to speak and understand Danish.

What does the study involve?

Patients are randomly allocated to either the intervention or the control group. The patients in the control group receive the departments standard treatment. This consists of surgery and physical rehabilitation commencing 12 weeks after surgery. The patients in the intervention

group will also receive the standard treatment. In addition to this, the patients are offered a short patient education focusing on pain coping by the use of CBT. The patient education is managed by a multidisciplinary team (surgeon, psychologist, physical and occupational therapist and social worker).

What are the possible benefits and risks of participating?

We hope that our intervention can provide better functional outcome, less pain and earlier return to work after surgery. The study is expected to provide new knowledge that can increase consistency in patient treatment. We expect that the results will make a significant contribution to the development of guidelines for good rehabilitation of patients undergoing LSF. This study includes health economic analyses, which we hope can help with prioritization in health and social planning. There are no side effects from the treatment, except from the bother of driving to and from the hospital for the patients enrolled in the intervention group. Patients will have their travel expenses covered. All patients are as a minimum guaranteed the standard treatment. The patients in the intervention group further receive a patient education, providing them with additional information, and the possibility of asking questions and sharing worries with other patients.

Where is the study run from?

The study is run from the Aarhus University Hospital, but the intervention takes place at the Regional Hospital of Silkeborg, Denmark.

When is the study starting and how long is it expected to run for?

The study began in October 2011 and is expected to run until October 2015.

Who is funding the study?

The Danish Council for Strategic Research, The Health Research Fund of Central Denmark Region, The Rheumatism Association Research Foundation and The Health Foundation.

Who is the main contact?

Ms Nanna Rolving

nannrasm@rm.dk

Contact information

Type(s)

Scientific

Contact name

Ms Nanna Rolving

Contact details

Department of Physical and Occupational Therapy

Aarhus University Hospital

Nørrebrogade 44, build. 3

Aarhus

Denmark

8000

+45 (0)7846 2210

nannrasm@rm.dk

Additional identifiers

Protocol serial number

N/A

Study information

Scientific Title

Effect and cost-effectiveness of a multidisciplinary preoperative cognitive intervention for lumbar spinal fusion patients: a randomized clinical trial

Study objectives

We expect that adding a preoperative multidisciplinary cognitive intervention to the standard treatment strategy for patients undergoing lumbar spinal fusion surgery:

1. Will reduce postoperative pain, enable an earlier and improved mobilization, and thereby decrease the length of hospitalisation following surgery.
2. Will have a positive effect on the patients level of function and quality of life, reduce time to return to work (RTW) and improve their ability to cope with pain.
3. Will be cost-effective.

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. Danish Protection Agency, 05/05/2011, ref. no. 2011-41-5899
2. Research Ethics Committee of Central Denmark Region, 05/05/2011, j. no. M-20110047

Study design

Single-blind randomized clinical trial

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Patients undergoing lumbar spinal fusion surgery at a maximum of three levels due to chronic low back pain caused by degenerative diseases or spondylolisthesis grade 1-2.

Interventions

Participants will be randomised to one of the following two groups:

Control

Treatment as usual, which includes surgery and the standard postoperative physical rehabilitation. Rehabilitation commences at 12 weeks after surgery and takes place in the primary sector (e.g., physical therapy clinic or a municipal rehabilitation center).

Intervention

Treatment as usual and in addition to this, a preoperative multidisciplinary intervention (patient

education) using a cognitive approach. This intervention consists of six sessions, each of three hours duration, adding up to a total of 18 hours. Patients are to attend four of the sessions prior to surgery, while the fifth and sixth sessions are placed postoperatively, at three and six months respectively. The patient education is managed by a multidisciplinary team consisting of a psychologist, an occupational therapist, a physiotherapist, a spine surgeon, a social worker and an experienced patient. It includes group-based sessions and consists of:

1. Pain and coping
2. Problem-solving training
3. Physical training and pacing using cognitive principles
4. General ergonomic directions
5. Information on the patients return to work plans
6. The surgical procedure and the immediate postoperative course

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

1. Disability: measured using the Oswestry Disability Index (0% = no disability, 100% = bed bound). Self reported at baseline, 1 month, 3 months, 6 months and 12 months.
2. Return to work/sick leave: data will be obtained from the DREAM Database, a national database administered by the Ministry of Employment at 12 months following surgery.

Key secondary outcome(s)

1. Pain: measured using the Low Back Pain Rating Scale (pain index). This is a self-report measure consisting of six scales (three for leg, three for back) questioning on pain right now, worst pain in the past 14 days, and average pain in the past 14 days. All scales are from 0 (no pain) to 10 (unbearable pain). Self reported at baseline, 1 month, 3 months, 6 months and 12 months.
2. Quality of life: measured using the Euroquol 5D (1 = full health, 0 = dead). Self reported at baseline, 1 month, 3 months, 6 months and 12 months. Self reported at baseline, 1 month, 3 months, 6 months and 12 months.
3. Coping strategies: measured using the Coping Strategies Questionnaire. The questionnaire is a 31-item (seven subscales) self-report inventory, where participants rate to what extent they use a given coping strategy on a seven-point Likert scale, ranging from 0 = never to 6 = always. Self reported at baseline, 1 month, 3 months, 6 months and 12 months.
4. Fear avoidance: measured using the fear avoidance beliefs questionnaire. The questionnaire consists of two subscales with several items each, a Physical Activity subscale (0-24 points) and a Work subscale (0-42 points). A higher score is indicative of a higher (worse) level of fear avoidance belief. Self reported at baseline, 1 month, 3 months, 6 months and 12 months.
5. Readmission to hospital and use of healthcare services: data are obtained from self-report diaries and Danish registries. Measured at 12 months.

Completion date

01/12/2015

Eligibility

Key inclusion criteria

1. Age 18-64 years
2. Scheduled for lumbar spinal fusion surgery due to degenerative disc disease or spondylolisthesis grade I to II
3. Ability to speak and understand Danish

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

64 years

Sex

All

Key exclusion criteria

1. Psychiatric diseases
2. Co-morbidity such as infection, fractures or malignant disease

Date of first enrolment

01/10/2011

Date of final enrolment

01/12/2015

Locations

Countries of recruitment

Denmark

Study participating centre

Aarhus University Hospital

Aarhus

Denmark

8000

Sponsor information

Organisation

The Danish Council for Strategic Research (Det strategiske Forskningsråd) (Denmark)

ROR

<https://ror.org/03ge1nb22>

Funder(s)

Funder type

Research organisation

Funder Name

The Health Research Fund of Central Denmark Region (Region Midtjyllands Sundhedsvidenskabelige Forskningsfond) (Denmark), ref: 1211061352202256581

Funder Name

The Rheumatism Association Research Foundation (Gigtforeningens Forskningsfond) (Denmark), ref: R111-A2612 and R102-A2083

Funder Name

The Health Foundation (Helsefonden) (Denmark), ref: 2008B127

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	20/05/2016		Yes	No
Protocol article	protocol	03/03/2014		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes