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Effects of progressive aquatic exercise on mobility ability and neuromuscular performance

Submission date
31/10/2008

Recruitment status
No longer recruiting

Registration date
23/01/2009

Overall study status
Completed

Last Edited
16/07/2010

Condition category
Musculoskeletal Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Dr Tapani Pöyhönen

Contact details
Kymenlaakso Central Hospital
Kotkantie 41
Kotka
Finland
48210

Additional identifiers

Study information

Scientific Title
Effects of progressive aquatic resistance training on mobility limitation and lower leg impairments after unilateral knee replacement

Study objectives
Progressive aquatic resistance training improves mobility ability, muscle power and mass after knee replacement.

Ethics approval required

Old ethics approval format

Ethics approval(s)
The Ethical Committee of the Kymenlaakso Central Hospital gave approval on the 16th February 2004

Study design
Interventional randomised controlled trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Knee joint osteoarthritis

Interventions
The 12 week aquatic exercise was specifically directed to improve quadriceps and hamstring muscle strength, power and muscle mass, and thus mobility. The control group did not receive any intervention. Participants were encouraged to continue their lives as usual and maintain their level of physical activity during the trial. Sessions were conducted twice a week in small classes including 4 - 5 people. Measurements were performed before and after the 12 week training period for both study groups.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Physical functional and mobility difficulties were assessed by Western Ontario and McMaster Universities osteoarthritis index (WOMAC) questionnaire, and mobility limitation by 10-metre habitual walking speed and stair ascending time. Measured 2 - 3 days before and after the 12 weeks training period both in exercise and control groups.

Key secondary outcome(s)
Knee extensor (KEP) and flexor power (KFP) were assessed isokinetically, and thigh muscle cross-sectional area (LCSA) by computed tomography (CT). Measured 2 - 3 days before and after the 12 weeks training period both in exercise and control groups.

Completion date
31/12/2007

Eligibility

Key inclusion criteria

All 201 patients (women and men, aged 55 - 75 years) who, according to the physical therapy records of Kymenlaakso Central Hospital, had undergone unilateral knee replacement 4 - 18 months prior to the study were informed about the study.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. Bilateral knee arthroplasty
2. Revision arthroplasty
3. Severe cardiovascular diseases
4. Dementia
5. Rheumatoid arthritis
6. Any major operation in either of the knees

Date of first enrolment
01/01/2005

Date of final enrolment
31/12/2007

Locations

Countries of recruitment
Finland

Study participating centre
Kymenlaakso Central Hospital
Kotka
Finland
48210

Sponsor information

Organisation
Kymenlaakso Central Hospital (Finland)

ROR
https://ror.org/05mmga691

Funder(s)

Funder type
Research organisation

Funder Name
Kymenlaakso Central Hospital (Finland) - research funding

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	01/06/2010		Yes	No