Cochrane Database of Systematic Reviews - - Cochrane Review

Physical therapies for postural abnormalities in people with cystic fibrosis

Code: CD013018 **Year:** 2020 **Date:** 2018 - updated 19 MAR 2020 **Author:** Oliveira V

Study design (if review, criteria of inclusion for studies)

Randomised controlled trials (RCTs) and quasi-RCTs (including cross-over trials).

List of included studies (2)

Sandsund 2010; Sandsund 2011

Participants

People with CF who have thoracic kyphosis or scoliosis regardless of age and degree of disease severity.

Interventions

Any modality of physical therapy considered relevant for treating postural disorders such as manual therapy (e.g. massage, spinal manipulation, and mobilisation), educational programs, exercise training (individualised or group-based or home-based), Pilates, stretching, GPR, IMT, and yoga. Each intervention of physical therapy will be compared with each other, to no physical therapy, sham treatment or usual care.

Outcome measures

Primary outcomes 1 Change in quality of life in carrying out activities of daily living over the short, medium and long term, measured by a validated instrument overall (e.g. Medical Outcomes Study 36 â€“ Item Short â€“ Form Health Survey (SF-36)) health-related (e.g. Cystic Fibrosis Questionnaire Revised (CFQ-R) (Quittner 2009)).2 Change in pain in carrying out activities of daily living over the short, medium and long term, measured by a validated instrument (e.g. visual analogue scale (VAS)), or other available pain scales (Numerical Rating Scale for Pain, Chronic Pain Grade Scale). 3 Change in trunk deformity in carrying out activities of daily living over the short, medium and long term, measured by a validated instrument (e.g. Cobb method, biophotogrammetry). Secondary outcomes. Treatment success (measured by a participant-reported global impression of clinical change (no improvement, much or very much improvement) or similar measures). Change in pulmonary function over the short, medium and long term, measured by a validated instrument (in L and % predicted). Change in functional capacity over the short, medium and long term, measured by a validated instrument (e.g. 3-minute step test or 6-minute walk test). Adverse effects. Adherence to treatment. Ease of access to intervention.

Main results

Two trials, involving a total of 50 participants with CF and postural abnormalities, were included in this review. One was in people with stable disease (lasting three months) and one in hospital inpatients experiencing an exacerbation (20 days). Both trials compared manual therapy comprising mobilizations to the rib cage and thoracic spine, treatment of specific muscle dysfunction or tight muscle groups; and postural awareness and education versus medical usual care. The age of participants ranged from 17 years to 58 years. Both trials were conducted in the UK. The following outcomes were measured: change in quality of life, change in pain, change in trunk deformity and change in pulmonary function. Manual therapy may make little or no difference to the change in trunk deformity compared to usual care (lowâ€•quality evidence). No results could be analysed for quality of life (very lowâ€•quality evidence) and pain outcomes (very lowâ€•quality evidence) because of the high heterogeneity between trials. It is uncertain whether the intervention improves lung function: forced vital capacity (very lowâ€•quality evidence); forced expiratory volume in one second (very lowâ€•quality evidence); or Tiffeneauâ€™s index (ratio of forced expiratory volume at one second (FEV1) and forced vital capacity (FVC)). Only one trial (15 participants) measured functional capacity, and the change in walked distance seemed to favour intervention over usual care, but with the possibility of no effect due to wide confidence intervals. The same trial also reported that six participants in the intervention group had positive comments about the intervention and no adverse events were mentioned.

Authors' conclusions

Due to methodological limitations in the included trials, and in addition to the very low to low quality of the current evidence, there is limited evidence about the benefits of physical therapies on postural abnormalities in people with CF. Therefore, further wellâ€•conducted trials with robust methodologies are required considering a prior inclusion criterion to identify the participants who

have postural abnormalities.

https://doi.org/10.1002/14651858.CD013018.pub2

See also

Oliveira VHB, Mendonça KMPP, Monteiro KS, Silva IS, Santino TA, Nogueira PAMS. Physical therapies for postural abnormalities in people with cystic fibrosis. Cochrane Database of Systematic Reviews 2020, Issue 3. Art. No.: CD013018. DOI: 10.1002/14651858.CD013018.pub2.

Keywords

non pharmacological intervention - devices OR physiotherapy; non pharmacological intervention - psyco-soc-edu-org; training; exercise; massage; inspiratory muscle training; Yoga;