

Physiotherapy Prevents Pulmonary Complications after Cardiac Surgery

Marie Blackmore*

Department of Allied Health and Social Practice, University of Canterbury, Christchurch, New Zealand

*Corresponding Author: Marie Blackmore, Department of Allied Health and Social Practice, University of Canterbury, Christchurch, New Zealand, Australia, E-mail: blackmmai@yhoo.com

Received date: October 31, 2022, Manuscript No. IPPR-22-15377; **Editor assigned date:** November 02, 2022, PreQC No. IPPR-22-15377 (PQ); **Reviewed date:** November 14, 2022, QC No. IPPR-22-15377; **Revised date:** November 24, 2022, Manuscript No. IPPR-22-15377 (R); **Published date:** November 30, 2022, DOI: 10.36648/J Physiother Res.6.11.144

Citation: Blackmore M (2022) Physiotherapy Prevents Pulmonary Complications after Cardiac Surgery. J Physiother Res Vol.6 No.11:144

Description

Pulmonary complications after cardiac surgery prolong hospital stay and increase healthcare costs. We performed a systematic review to determine to what extent respiratory physiotherapy prevents such complications, and the best type of physiotherapy intervention. We chose the setting of cardiac surgery for three reasons. Firstly, patients are prone to pulmonary complications after surgery; up to 65% of patients may have an atelectasis, and 3% may develop pneumonia.

Respiratory Physiotherapy

We included full reports of randomised trials of adults or children who had undergone cardiac surgery. Inclusion criteria included any method of prophylactic respiratory physiotherapy compared with no intervention or with another method of respiratory physiotherapy, and an observation period of at least two days. The trials also had to assess at least one of four end points: atelectasis, pneumonia, oxygenation (partial pressure of arterial oxygen, with the corresponding fractional inspired oxygen), and pulmonary function (vital capacity or forced expiratory volume in one second). If end points were reported at different time points after surgery, we considered the latest. For atelectasis, pneumonia, and adverse effects we extracted dichotomous data. To establish the relative efficacy of physiotherapy in the absence of a gold standard intervention, we regarded as the most valid study design comparisons between an active intervention and a no intervention control. Active (head to head) comparisons were of secondary importance. Evidence is lacking as to whether prophylactic respiratory physiotherapy prevents pulmonary complications after cardiac surgery. Two published systematic reviews examined the relation between respiratory physiotherapy and outcome after different operations, but they obtained conflicting results. One found benefits from incentive spirometers and deep breathing exercises after upper abdominal surgery, but pooled data came from different end points such as atelectasis and pulmonary infiltrates or consolidation. The other review found incentive spirometer to be of no benefit after cardiac and upper abdominal surgery. Again, data were combined from trials with a variety of different end points. Our

conclusions reflect more uncertainty, showing several limitations in the original trials. These limitations are the main weakness of our systematic review. On average the quality of the trials was low. Only a minority reported on an appropriate method of randomisation or on concealment of allocation, although bad reporting may not mean bad practice. In only a few trials was the follow up of patients adequately reported and data analyzed according to intention to treat. One inherent problem of trials in this setting is that at best the observer can be blinded. Over two thirds of the trials attempted to blind the observers. We do not know if trials of better quality would have reached different conclusions. Practical management of physiotherapy was inconsistent. For example, the reported duration of daily continuous positive airway pressure varied by a factor of 10. Inconsistency suggests that there is uncertainty about how each method should be applied and how frequently.

Spirometry

For the articles included incentive spirometers was used in three; deep breathing exercises in six; deep breathing exercises added to positive expiratory pressure in four and positive airway pressure added to inspiratory resistance in two. Three trials used intermittent positive pressure breathing. Continuous positive airway pressure and bi-level positive airway pressure has been used in three and two trials. The protocols used in the studies were varied and the co interventions were present in a big part of these. The different analysed varieties and the time of post operative follow up make a comparative analysis difficult. Pulmonary dysfunction is evident in the post operative period of cardiac surgery. The use of non-invasive ventilation has been associated with good results in the first postoperative days. Despite the known importance of post operative respiratory physiotherapy, until now, there is no literary consensus about the superiority of one technique over the others. The results demonstrated a significant improvement in 6-minute walk distance, blood pressure, anxiety and quality of life following physiotherapy interventions in individuals with CVDs. However, there was a high risk of bias for all outcomes. There were critical weaknesses in all domains of GRADE criteria for all outcomes which resulted in very low evidence. The cultural adaptations of interventions were inadequately reported.