

摘要

本研究目的旨在探討提供下肢閉鎖式動力鏈運動(CKCE)之復健方案，對全膝人工關節置換術病患的肌力與膝關節功能之成效，屬臨床試驗，採類實驗型、縱貫性之研究設計。以北部某一醫學中心，立意取樣方式，經病患同意後，收集 50 名病患為研究對象，隨機分派為實驗組 25 名及對照組 25 名。實驗組行下肢閉鎖式動力鏈復健運動指導，對照組依常規行下肢開放式動力鏈運動 (OKCE)。

研究工具包括等速肌力測試儀(Isokinetic dynamometer)、病患基本資料表、「Knee Injury and Osteoarthritis Outcome Score」(KOOS)量表，測量點為術前、術後六週及術後三個月。所得資料以 SPSS11.0 版套裝軟體進行編碼及分析，主要之統計方法包含：描述性統計、卡方檢定、T 檢定及 General Linear Mix-effect Model (GLMM)。

研究結果以等速肌力測驗時，兩組病患在 60 度/秒、180 度/秒膕旁腱肌力及 180 度/秒股四頭肌力之差異，皆達到統計上顯著意義 ($p<0.05$)，顯示 CKCE 之介入措施成效優於 OKCE；膕旁腱肌力/股四頭肌力之比值，兩組皆維持在 0.49-0.87 的範圍，未達統計上之顯著差異 ($p>0.05$)。以 KOOS 量表測得之膝關節功能，不同介入措施在日常生活活動、運動和休閒功能及膝部相關的生活品質皆能達統計上之顯著差異 ($p<0.05$)，而疼痛及症狀面向未達統計上之顯著差異 ($p>0.05$)。

英文摘要

The purpose of this study was to evaluate the efficacy of lower limb closed kinetic chain exercise in the muscle strength and knee function for total knee arthroplasty patients. This was a quasi-experimental, longitudinal clinical study done at a medical center in the northern part of Taiwan. Fifty patients with their consents were randomly and equally divided into a study group and a control group. The study group was instructed for CKCE, while the control group was routinely given OKCE.

The study instruments included the isokinetic dynamometer, patient basic data sheet, and KOOS. The assessment points were set at 6 weeks pre-operation, and three months post-operation. Statistical Package for the Social Science (SPSS) 11.0 software package was used for data analysis which included descriptive statistics, Chi-square test, student's-T test and General linear mix-effect model (GLMM). All tests were considered statistically significant at the $p<0.05$ level.

The isokinetic test results presented a significant difference ($p<0.05$) between the two groups in the muscle strength of popliteus at the test speed of 600 per second, 1800 per second, and also in quadriceps at the speed of 1800 per second. It indicated the superior outcome with the intervention of CKCE. The ratio of the two muscles was at the range of 0.49~0.87 between both groups, thus there was no statistically significance ($p>0.05$). By using the KOOS to assess knee function, we found different

strategies did reveal a statistical difference in the daily activities, sports and recreational functions , and life quality ($p < 0.05$); however, there was no significant difference found in pain and symptoms ($p > 0.05$)