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Clinical Prediction Rules for Using Open Kinetic Chain Exercise in Treatment of Knee Osteoarthritis

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Abstract : Relevance: Osteoarthritis (OA) is the most common degenerative disease seen in all populations. It causes disability and substantial socioeconomic burden. Evidence supports that exercise are the most effective conservative treatment for patients with OA. Therapists experience and clinical judgment play major role in exercise prescription and scientific evidence for this regard is lacking. The development of clinical prediction rules to identify patients who are most likely benefit from exercise may help solving this dilemma. Purpose: This study investigated whether body mass index and functional ability at baseline can predict patients' response to a selected exercise program. Approach: Fifty-six patients, aged 35 to 65 years, completed an exercise program consisting of open kinetic chain strengthening and passive stretching exercises. The program was given for 3 sessions per week, 45 minutes per session, for 6 weeks Evaluation: At baseline and post treatment, pain severity was assessed using the numerical pain rating scale, whereas functional ability was being assessed by step test (ST), time up and go test (TUG) and 50 feet time walk test (50 FTW). After completing the program, global rate of change (GROC) score of greater than 4 was used to categorize patients as successful and non-successful. Thirty-eight patients (68%) had successful response to the intervention. Logistic regression showed that BMI and 50 FTW test were the only significant predictors. Based on the results, patients with BMI less than 34.71 kg/m2 and 50 FTW test less than 25.64 sec are 68% to 89% more likely to benefit from the exercise program. Conclusions: Clinicians should consider the described strengthening and flexibility exercise program for patents with BMI less than 34.7 Kg/m2 and 50 FTW faster than 25.6 seconds. The validity of these predictors should be investigated for other exercise.

Keywords : clinical prediction rule, knee osteoarthritis, physical therapy exercises, validity
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