ON THE REHABILITATION OF NON-ACUTE, NON-SPECIFIC SPINAL PAIN

AKADEMISK AVHANDLING
som för avläggande av medicine doktorsexamen vid Karolinska Institutet offentligen försvaras i Hörsal 4-263, entréplanet, Alfred Nobels allé 12, Huddinge.

Fredagen den 17 december 2010, kl 09.00

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Stockholm 2010
ABSTRACT

Background
Non-specific spinal pain (NSP), comprising back and/or neck pain, is one of the leading disorders behind long-term sick-listing. The general aim was to study the rehabilitation of non-acute (=leading to full-time sick-listing > 3 weeks) NSP as regards epidemiology ((Study I), reliability (II), treatment (III), and return-to-work prediction (IV).

Specific aims: I: To compare living conditions associated with long-term sick-listing for NSP in patients with non-acute NSP with a population-based sample of non-patients. II: To answer the question “given a 10-test package of function tests for patients with non-acute NSP, could an examiner without formal medical education be used without loss of quality?” III: For patients with non-acute NSP, a programme of cognitive-behavioural rehabilitation was compared with traditional primary care. The specific aim was to answer the question “within an 18-month follow-up, will the outcomes differ in respect of sick-listing and number of health-care visits?” IV: For patients with non-acute NSP, to answer the question “which are the predictors at baseline for stable (= lasting ≥ 1 month) return-to-work during a 2-year period after baseline: objective variables from function tests, socioeconomic, subjective and/or treatment variables?”

Methods
I (cross-sectional study): For the 125 patients of study III, living conditions were compared with 338 non-patients by logistic regression. II (methodological study): Examination by a physiotherapist (A) in performing the 10-test package was compared with that by a research assistant (B) without formal medical education. The reliability, including inter- and intra-rater reliability, was assessed. In the inter-rater reliability study, 50 participants (30 patients + 20 healthy subjects) were tested once each by A and B. In the intra-rater reliability study, the 20 healthy subjects were tested twice by A or B. One-way ANOVA intra-class-correlation coefficient (ICC) was calculated. III (randomized controlled trial): After stratification by age (≤ 44 / ≥ 45 years) and subacute / chronic (= full-time sicklisted 3-12 / > 12 weeks) NSP, 125 primary-care patients were randomized to cognitive-behavioural rehabilitation (rehabilitation group) or continued primary care (primary-care group). Outcomes: Return-to-work share (percentage) and Return-to-work chance (hazard ratios) over 18 months; Net days (crude sick-listing days x degree), and the number of Visits (to physicians, physiotherapists etc) over 18 months and the 3 component 6-month periods. Descriptive statistics, Cox regression and mixed-linear models were used. IV (prospective cohort study): Stable return-to-work was the outcome variable, the above-mentioned factors were the predictive variables in multiple-logistic regression models, one per follow-up at 6, 12, 18 and 24 months. The predictors which were represented in ≥ 3 follow-ups were finally considered.

Results
I: In the univariate analyses, 13 of the 18 living conditions had higher odds for the patients with a dominance of physical work strains and Indication of alcohol over-consumption, (odds ratio (OR) 14.8 (95% CI) [3.2–67.6]. Five conditions remained in the multivariate model: High physical workload, 13.7 (5.9–32.2]; Hectic work tempo, 8.4 (2.5–28.3]; Blue-collar job, 4.5 (1.8–11.4]; Obesity, 3.5 (1.2–10.2]; and Low education, 2.7 (1.1–6.8]. II: All 5 tests requiring no manual fixation had acceptable reliability (ICC > 0.60 and no indication of systematic error). The 5 tests that required manual fixation had poor reliability except cervical rotation. The difference (5 vs 1) was significant (p = 0.01). III: All patients: Return-to-work share and Return-to-work chance were equivalent between the groups. Net days and Visits were equivalent over 18 months but decreased significantly more rapidly for the rehab group over the 6-month periods (p < 0.05). Subacute patients: Return-to-work share was equivalent. Return-to-work chance was significantly greater for the rehab group (hazard ratio 3.5 [1.001–12.2]). Net days were equivalent over 18 months but decreased significantly more rapidly for the rehab group over the 6-month periods and there were 31 days fewer in the 3rd period. Visits showed similar though non-significant differences and there were half as many in the 3rd period. Chronic patients: Return-to-work share, Return-to-work chance and Net days were equivalent. Visits were equivalent over 18 months but tended to decrease more rapidly for the rehab group and there were half as many in the 3rd period (NS). IV: Three variables qualified: Low total prior sick-listing (including all diagnoses) was the strongest predictor in 2 follow-ups, 18 and 24 months, (OR) 4.8 [1.9–12.3] and 3.8 [1.6–8.7] respectively, High self prediction (the patients’ own belief in return-to-work) was the strongest at 12 months, 5.2 [1.5–17.5] and Young age (<44) the 2nd strongest at 18 months, 3.5 [1.3–9.1].

Conclusions
Epidemiology: In the univariate analyses, the patients vs the non-patients had higher odds for most of the conditions. In the multivariate analysis, 5 conditions qualified, indicating work strains, lower social class and life-style. As these cross-sectional data makes causal conclusions impossible, they should be complemented by prospective research. Reliability: Given a 10-test package for patients with non-acute NSP, an examiner without formal medical education could be used without loss of quality, at least for the 5 tests that require no manual fixation. To make our results more generalizable, a similar study should be conducted with 2 or more examiners with and without formal medical education, and the intra-rater reliability study should also include patients and involve more participants. Treatment: Though the results were equivalent over 18 months, there were indications that cognitive-behavioural rehabilitation in the longer run might be superior to primary care. For subacute NSP, in terms of both sick-listing and health-care visits; for chronic NSP, in terms of health-care visits only. More conclusive results concerning this possible long-term effect might require a longer follow-up. Return-to-work prediction: The strong predictors of stable return-to-work were 2 socioeconomic variables (Low total prior sick-listing and Young age), and 1 subjective variable (High self prediction). Objective variables from function tests and treatment variables were non-predictors.

Keywords: Non-specific; non-acute; subacute; chronic; spinal pain; back pain; neck pain; sick-listing; cross-sectional; methodological; randomized controlled; prospective cohort; epidemiology; reliability; treatment; return-to-work; prediction.