A longitudinal study of the factors that influence patients’ medication adherence at the start of cardiac rehabilitation (CR) and 6 months later

Thomson P 1, Angus NJ 2, Rushworth G 3, Leslie SJ
1. University of Stirling, Faculty of Health Sciences and Sport, Stirling, UK; 2. University of the Highlands and Islands, Department of Nursing, Inverness UK; 3. NHS Highland, Highland Pharmacy Education & Research Centre, Inverness UK; 4. NHS Highland, Cardiac Unit, Raigmore Hospital, Inverness, UK

Introduction

- Non-adherence to prescribed medications is common among cardiac patients (Maddox & Ho 2009)
- Self-reports of medication non-adherence are strongly associated with adverse cardiac events including CHD death, MI and stroke (Ho et al. 2008)
- Patterns of medication taking behavior may be linked to other behaviors and conditions such as motivation, capability and opportunity (CR)
- There is limited knowledge of the associations between patients’ illness perceptions, beliefs about CR, quality of life and medication adherence

Purpose

To compare changes in patients medication adherence at the start of CR (TP1) and 6 months later (TP2)

To examine the associations between patients’ illness perceptions, beliefs about CR and quality of life at TP1 and medication adherence at TP2

Methods

- Design & sample: Longitudinal, descriptive study of patients with a diagnosis of acute coronary syndrome (ACS) recruited from a CR service at Raigmore Hospital, NHS Highland
- Data Collection: At start of CR programme (TP1) and 6 months later (TP2)
- Measures: Medication Adherence Report Scale (MARS-5) (Horne 2004); Morisky Medication Adherence Scale (MMAS–8) (Morisky et al. 2008); Brief Illness Perceptions Scale (B-IPO) (Broadbent et al. 2006), Beliefs about CR Questionnaire (BCR) (Cooper et al. 2007) and the SF-12 Health Survey (SF–12) (Ware et al. 2005)
- Data analysis: Descriptive statistics, chi squares, independent sample t test, Spearman’s correlations, logistic regression (low vs medium / high adherers)

Results

- 40 patients with a diagnosis of ACS (70% male, mean age = 62.3 years (SD 7.8 years)
- Patients’ physical health score at TP1 (SF–12) - mean 47.03 (SD 8.2) and mental health - mean 47.58 (SD 8.8) i.e. both dimensions scoring below the population average of 50.

Patients’ medication adherence

- No significant changes in patients’ total scores on MARS-5 and MMAS-8 from baseline to 6 months

Patients illness perceptions and beliefs

- For illness perceptions (B-IPO) there were higher scores for perceived consequences and lower scores for personal control compared to previous populations of MI patients on hospital discharge (Broadbent et al. 2006)
- For beliefs about CR (BCR) the scores for necessity were higher compared to Cooper et al. (2007) and lower for concerns about exercise, practical barriers and perceived suitability

Unintentional and intentional non-adherence

- MARS-5 distinguishes between unintentional and intentional non-adherence to medication
- Results suggest no intentional / conscious non-adherence e.g. not taking medication causing side effects by patients at TP1 or TP2
- Most patients reported ‘never’ being unintentionally non-adherent i.e. forgetful at TP1 or TP2
- Patients that they were ‘sometimes’ or ‘rarely’ unintentionally non-adherent at TP1 and TP2 but never ‘always’ or ‘often’

Specific medicine taking behaviours

- The 8 item MMAS measures specific medication taking behaviours. 3 categories of adherence are high (score, 8), medium (score, 6 to <8) and low (score, 6)
- Most patients (55.0 – 57.5%) had high levels of adherence at TP1 and TP2.
- At 6 months, more patients reported medium adherence compared to baseline (40% v 35%) and at 6 months less patients reported low adherence than baseline (2.5% vs 10.0%) (Fig 1)

Correlations among illness perceptions, beliefs about CR and QoL

- Patients’ perceived practical barriers to CR at baseline were moderately negatively correlated with levels of adherence at 6 months (r = -.355, p = 0.025) (MMAS-8)
- Results indicated greater perceived practical barriers to CR were related to lower levels of medication adherence
- Patients’ total scores for MARS-5 and MMAS-8 were strongly positively correlated at 6 months (r = .593, p<0.001)

Regression Analysis

No significant (baseline) predictors of medication adherence at 6 months

Conclusion

- Greater perceived barriers to CR were related to lower levels of medication adherence (MMAS)
- Overall there was sub-optimal medication adherence in this group of CR patients which is disappointing considering the risk post ACS
- Although there was no intentional non-adherence, 11 patients (27.5%) were non-intentionally non-adherent i.e. forgot to take their medication (MARS-5)
- 17 of patients reported medium to low levels of adherence at 6 months
- There were differences in self-reported adherence between the two scales, MARS and MMAS-8, which warrants further investigation
- More longitudinal research is needed with a larger sample size to explore whether illness perceptions and other beliefs about CR are associated with medication adherence

Funding Acknowledgement: Chest, Heart & Stroke Scotland