IMPROVEMENT IN ANTIHYPERTENSIVE AND CHOLESTEROL-LOWERING MEDICATION PERSISTENCE USING A MOBILE TECHNOLOGY APPLICATION

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Background
• Poor adherence to medication in chronic diseases is recognized as a serious public health problem by the United States (US) Center for Disease Control. Apart from leading to poor treatment outcomes, non-adherence is estimated to contribute $300 to $500 billion in avoidable healthcare cost in the US annually.1,2
• Medication adherence is crucial to better treatment efficacy, healthcare cost containment, and in some cases, for preventing medication to therapy.3
• With the exponential growth in mobile health technologies, using smartphone applications (apps) to promote medication adherence is a novel approach that can have long-term benefits for patients, providers and payers.1,3-4

Objective
To evaluate persistence and adherence in patients taking anti-hypertensive and cholesterol-lowering medications while using the Medisafe mobile application (app) that employs scheduled reminders, a motivation and social support system, and other personalized tools, compared to a matched control group.

Methods
• Design: Matched Cohort Study
• Data sources: Medisafe mobile app-data linked to IMS patient anonymous de-identified prescription database
• Study period: October 1, 2013 – June 30, 2015
• Index Period: October 1, 2014 – December 31, 2014

• Patient Selection:
  - Patients entering a dosing schedule for an antihypertensive (AH) or cholesterol-lowering (CL) therapy between 10/1/2014-12/31/2014 in the Medisafe mobile app (users) were matched 1:1 to non-app users (controls) with patient anonymous prescription claims for AH or CL identified in the IMS-deidentified prescription database.
  - Patients were matched on therapy class, age, gender, payer type, geography, and if new to therapy
  - Look-back and follow-up: a 12-month look-back period from Index was used to determine if patients were “New to Therapy” or “Continuing”, a 6-month follow-up period from the index date was used to measure study outcomes.

• Outcomes: Persistence was calculated at the Hypertension/Cholesterol market level during 6 months post-index period, and was measured using a 10-day refil gap past the end of the 6-months’ supply of the previous prescription. Differences were tested using Chi-square

Study Overview

Study Schema

Results
• There were a total of 4000 Anti-hypertensive (AH) and 3000 Cholesterol-Lowering (CL) users matched to controls
• The median age of the patients was 52.5 (12.0) and 54.6 (10.7) years for AH and CL, respectively
• The AH and CL study groups were approximately equal in male-female ratio
• Of AH users, 7.9% were new to therapy, while 7.3% CL patients were new to therapy
• Comparing all patients at 6 months, a 4.4% higher persistence for AH (60.7% vs. 56.3%, p=0.03) and a 10.7% higher persistence for CL (65.3% vs. 54.7%, p=0.03) was observed for AH and CL app users
• Of AH app users exhibited higher persistence at all reporting periods (Figure 1 and 2)
  - CI app users exhibited higher persistence by the 3rd reporting period (Figure 2).
  - The relative increase in persistence was 8.4% at 6 month for AH app users group and it was 19.3% for the CL app users at all the time period
• Similar results were observed among continuing patients at 6 months, with AH app users having a 4.5% higher persistence (77.7% vs. 73.7%, p=0.00) (Figure 3) and CL app users having a 15.1% higher persistence (68.4% vs. 53.2%, p=0.01) compared to controls (Figure 4)

• This pilot study found that patients with anti-hypertensive or cholesterol-lowering therapy using the Medisafe app exhibited improved persistence compared to matched controls, the relative increase over 6 months was 8.4% for AH app users and 10.7% for CL app users
• Broad use of mobile technology that supports medication adherence could lead to better control of chronic diseases and the cost impact to the health care system.

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Conclusions

References