

CORRESPONDENCE

Patient-oriented medication education intervention has long-term benefits for people with decompensated cirrhosis

To the editor,
 Patient barriers to self-management in cirrhosis are complex.^[1] Although several studies have demonstrated improved knowledge or self-care behaviors following education,^[1] long-term outcome data are lacking. We previously reported that a multifaceted pharmacist-led intervention for people with decompensated cirrhosis (including patient-oriented education, medication reconciliation, and identification and resolution of “high-risk” medication-related problems) was associated with fewer unplanned admissions at 12 months compared to usual care (adjusted incidence rate ratio [aIRR], 0.52; 95% confidence interval [CI], 0.30–0.92; $p = 0.025$).^[2] Despite the relatively short 6-month intervention delivery period, new outcome data demonstrate unplanned admission rates in the intervention group remained lower than usual care out to 3 years.

Participants were followed for a mean of 27.8 (SD, ± 11.9) months and censored at death ($n = 41$; 35.3%), liver transplant ($n = 5$; 4.3%), or study closeout at 3 years ($n = 70$; 60.3%). Forty-one patients receiving intervention (41/57, 71.9%) and 50 patients receiving usual care (50/59, 84.7%) had at least one unplanned admission during the follow-up period (unplanned admission rate, 3.72 vs. 4.34; Mann-Whitney U, $p = 0.272$) (Figure 1). Using a generalized linear model with negative binomial distribution offset by person time to censorship, patients receiving intervention had a significantly lower incidence rate of unplanned admissions at 3 years compared to usual care (aIRR, 0.56; 95% CI, 0.34–0.92; $p = 0.023$), following adjustment for Child-Pugh score (aIRR, 1.47; 95% CI, 1.28–1.68; $p < 0.001$), number of medications (aIRR, 1.09; 95% CI, 1.03–1.15; $p = 0.005$), history of variceal bleeding (aIRR, 2.36;

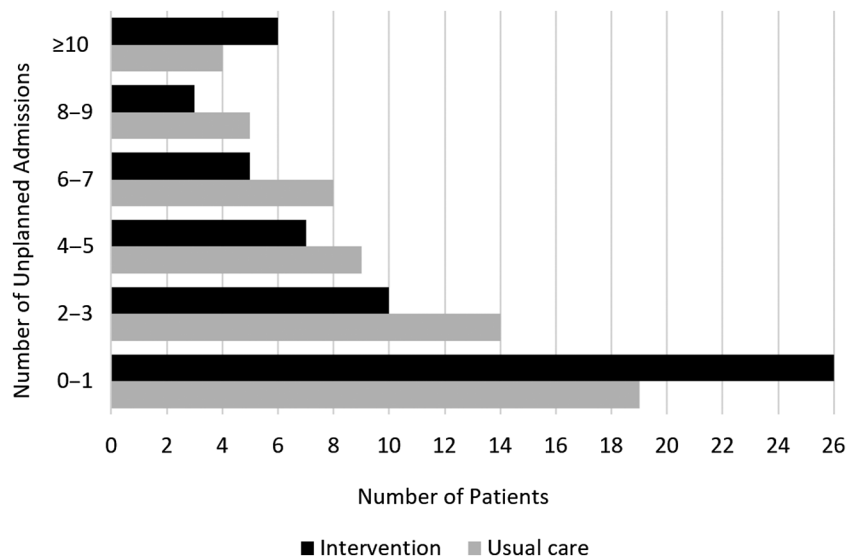


FIGURE 1 Number of unplanned admissions over 3 years among participants in a randomized-controlled trial of a pharmacist-led education intervention for patients with decompensated cirrhosis

Abbreviations: aIRR, adjusted incidence rate ratio; CI, confidence interval.

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95% CI, 1.30–4.29; $p = 0.005$), and alcoholic liver disease (aIRR, 0.63; 95% CI, 0.40–1.00; $p = 0.050$).

We further conducted a subanalysis of unplanned admissions that were considered medication related and potentially preventable.^[2] Using a multinomial logistic regression model (due to the large count of zero admissions) adjusted for Child-Pugh score and number of medications, patients receiving usual care were 3.5 times more likely to have three or more “potentially preventable medication-related admissions” compared to zero than patients receiving intervention, although this did not reach statistical significance (adjusted odds ratio, 3.52; 95% CI, 0.69–17.81; $p = 0.129$). There was no difference in mortality rate (intervention 31.6% vs. usual care 39.0%; $p = 0.404$) or mean time to censorship (28.5 vs. 27.2 months, respectively; log-rank $p = 0.530$).

These findings suggest that a pharmacist-led intervention, which empowers patients (and their caregivers) with improved knowledge about cirrhosis and medicines,^[3] reinforces perceptions of treatment necessity and utility in disease management,^[3] provides tools to manage medicines (e.g., a structured list^[2]), and builds confidence to actively engage with health care providers, has long-term benefits for patients and the health care system. Despite completion of active pharmacist intervention at 6 months, the benefits persisted over time and translated to fewer hospitalizations independently of liver disease severity. These data support inclusion of a pharmacist in the multidisciplinary team.

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CONFLICT OF INTEREST

Nothing to report.

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