Improving Proton Pump Inhibitor Deprescribing Behaviors in Home Based Primary care
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Background

- More than 113 million prescriptions for proton pump inhibitors (PPI) are written every year, with as many as 71% without an appropriate indication.
- PPIs are associated with polypharmacy and increased risk of adverse events, such as recurrent enteral infections, cardiovascular death, hospital-acquired pneumonia, chronic kidney disease and interstitial nephritis.
- Lack of clinician knowledge and adherence to national guidelines are significant barriers to reducing the harmful effects and excessive spending caused by inappropriate PPI use.

Purpose & Specific Aims

Purpose: 12-week pilot to increase clinician deprescribing behaviors with education and electronic medical records audits.

Aim 1: Increase clinician PPI deprescribing behaviors
Aim 2: Increase clinician knowledge regarding PPIs
Aim 3: Determine feasibility of ongoing EBP practices

Intervention

- Clinician Education
- EBP Deprescribing Algorithm
- Daily EMR chart audit with clinician notification

Methods

Design: Pre-intervention/ post-intervention pilot
Setting: Small, private home-based primary care practice
Sample: 1. Home based, primary care nurse practitioner 2. Adults patients, aged 50 or older prescribed a PPI
Measures: Reduction in Prescribed PPIs (%), Knowledge Scores (KAP), Attitudes toward EBP (EBPAS)
Analysis: McNemar, Wilcoxon-Signed Rank, Descriptive

Results

Aim 1:
- Pre-intervention, 103 patients (100.0%) prescribed a PPI
- Post-intervention: 84/103 patients (81.64%) prescribed a PPI
- McNemar test indicated the two proportions were statistically significant (p=0.0001)

Aim 2:
- Median total score for the KAP survey increased from pre to post intervention (Pre: Mdn: 95 ± SD 8.06 vs Post: Mdn 102 ± SD 15.5)
- Wilcoxon-signed Rank test indicated the results were not statistically significant
- (α .05, F = 2.00, z = -0.53, p = .593), with a small effect size (r =0.18)

Aim 3:
- Median total score was 108.67 (SD 24.54)
- Participants scored highest in openness, fit, divergence, burden and limitations and lowest for balance and job security.
- Participants responded most variably and lowest on monitoring, job security and organizational support.
- Felt they would use the intervention as long as it was not burdensome and was well-supported.
- Did not feel it was important to keep their job

Discussion

- Clinician education, deprescribing algorithms and EMR chart audits are a feasible and efficacious means to reduce inappropriate PPI use.
- Clinician education results in small increases in overall knowledge but does translate to changes in attitudes or practices regarding PPI use.
- Clinicians indicated an overall positive attitudes toward continued EBP if it was supported by research and not burdensome to daily activities, but did not feel it was helpful to them keeping their jobs or more important than their overall competence.

Limitations

- Small clinician sample size (N=4), resulting in potentially skewed, or biased results
- QI focused primarily on education of EBP algorithm and EMR chart audits
- Small setting with minimal clinical support or automated processes may not be generalizable

Conclusion

- Clinician education on deprescribing algorithms and EMR chart audit with notification effectively reduces inappropriate PPI prescriptions and the potential for adverse effects and spending associated with them.
- Implications for Practice:
  - EMR chart notification and EBP algorithms assist providers in identifying PPIs appropriate for discontinuation.
  - EBP interventions are feasible for continued use if they are simple to use in daily practice.
  - Education does not necessarily change provider attitudes toward prescribing practices
- Future Projects/ Research: Large-scale education and built-in automated processes.

Acknowledgements & References

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References


Sample:
- Pre: N=103
- Post: N=84

Summary Statistics for EBPA:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre Median (SD)</th>
<th>Post Median (SD)</th>
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<tbody>
<tr>
<td>Attitudes</td>
<td>108.67 (24.54)</td>
<td>108.67 (24.54)</td>
</tr>
<tr>
<td>Knowledge</td>
<td>95 (8.06)</td>
<td>102 (15.5)</td>
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<tr>
<td>Practice</td>
<td>0 (0)</td>
<td>0 (0)</td>
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Analysis:
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