Understanding Treatment Patterns of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and Proton Pump Inhibitors (PPIs) in Patients with the Signs and Symptoms of Osteoarthritis (OA), Rheumatoid Arthritis (RA) and Ankylosing Spondylitis (AS)

Alison Dziarmaga[1], Kristen Reidel[2], Robert White[1], Jean-Eric Tarride[1], Neil Corner[2]

BACKGROUND AND STUDY OBJECTIVES

The use of PPIs to reduce the risk of upper GI events is well documented. The aim of this study was to understand whether newly diagnosed patients with OA, RA and AS not previously exposed to PPIs, receive a gastro-protectant with their NSAID treatment at initiation or 6 month follow-up period in a primary care setting.

METHODS

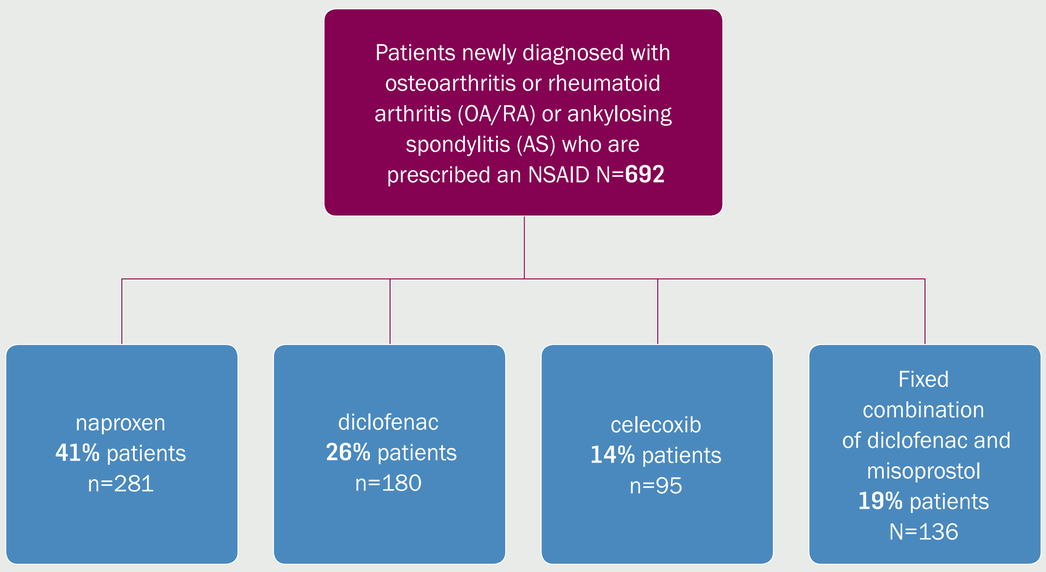
We analyzed de-identified patient data from Primary Care Electronic Medical Records (EMR) in Ontario, Canada. Patients ≥18 years, who were new users of NSAIDs, NSAID plus a PPI, a fixed combination of diclofenac and misoprostol, or celecoxib between January 1st 2010 and May 31st 2012 were selected. Patients must have had a diagnosis for OA, RA, or AS within 6 months of treatment initiation, but no diagnosis in the year prior. Patients were followed for 6 months to assess for subsequent PPI prescription. Patients prescribed a PPI in the last 12 months were excluded.

Results were compared to Longitudinal Prescription Data (IMS LRx).

RESULTS

There were 692 patients included in the study. The majority were female (56%) and the mean age was 44 years. Naproxen was the treatment for 41% of patients, followed by diclofenac at 26%, the fixed combination of diclofenac and misoprostol at 19%, and celecoxib 14%.

Figure 1. **Distribution of PPIs Within Defined Patient Population**



PPIs were only added to the treatment initiation or during the follow-up period in < 10% patients.

Figure 2. **No significant difference was seen between the amount of PPI usage in each treatment arm**

Regimen	naproxen	diclofenac	Fixed combination of diclofenac and misoprostol	celecoxib
	n=281	n=180	n=136	n=95
PPI at treatment initiation	2.5%	1.7%	3.7%	2.1%
PPI added during the follow-up period	3.0%	2.8%	2.2%	3.2%

No statistical significance ($p<0.05$) was seen when comparing all drug combinations for PPI at treatment initiation, or PPI added during the follow-up period. Therefore, there is no statistical significance between treatments when a PPI was given at treatment initiation, or during follow-up.

RESULTS

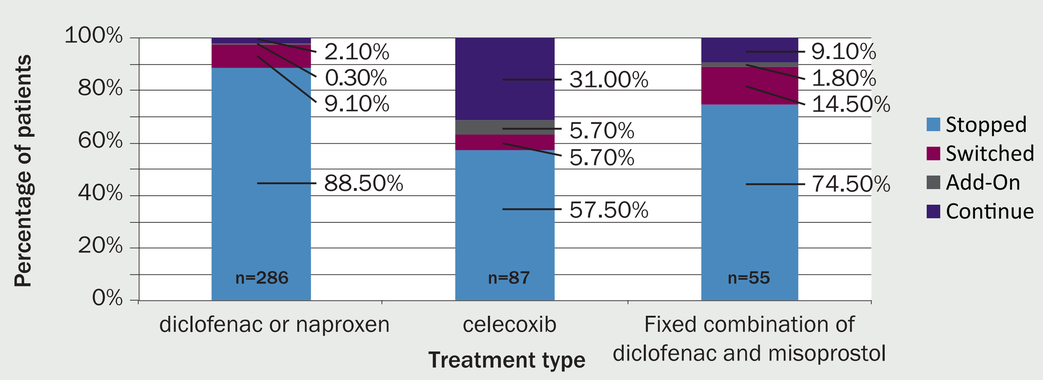
PPI prescription patterns analyzed were within the 6 month follow-up period and did not differ significantly from those at initiation, and were consistent with patterns observed in a national longitudinal prescription database (IMS LRx) covering 60% of Canadians. In order to confirm and validate our results, we compared our findings to a large Canadian longitudinal prescription database. Diagnosis codes were removed because over 10 million prescriptions are written each year for PPIs in Canada[3] for various diagnoses. Otherwise the same protocol was followed. Similar patterns of treatment were observed:

Figure 3. **EMR Data Compared to Longitudinal Prescriptions (LRx)**

Comparison to longitudinal prescriptions	NSAID use excluding diagnosis – IMS LRx (N=363,886)		NSAID use excluding diagnosis – IMS EMR (N=2,040)	
	n	%	n	%
PPI at index	17,305	4.80%	50	2.50%
PPI during follow-up	17,064	4.70%	57	2.80%
No PPI at index or follow-up	329,517	90.60%	1,933	94.80%

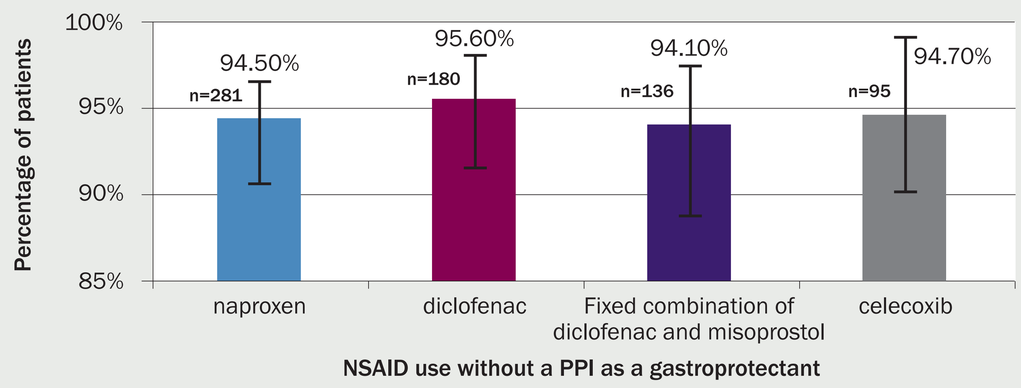
RESULTS

Figure 4. **Patients taking diclofenac or naproxen were less likely to persist with treatment**



>90% of all patients treated with an NSAID to treat OA/RA and AS did not receive a PPI as a gastroprotectant.

Figure 5. **Percentage of patients who did not receive a PPI as a gastroprotectant**



CONCLUSIONS

These results suggest that primary care physicians in Ontario, Canada do not prescribe PPIs with NSAIDs at or within 6 months following NSAID initiation. Further studies are required in order to better understand the impact of low PPI concomitant use with NSAIDS, especially in older patients or those who were at a higher risk of GI events.

STUDY LIMITATIONS

The sample size of our cohort was quite small and the mean age was young. We also included a new user design and may have excluded patients who were already taking a PPI and at high risk of GI events. Lastly, the study did not consider advice from the physician to the patient to use over-the-counter medication or the use of over-the-counter medication.

[1] AstraZeneca
[2] IMS Brogan Canada (A Unit of IMS Health)
[3] Evidence for PPI Use in Gastroesophageal, Reflux Disease, Dyspepsia, and Peptic Ulcer Disease: Scientific Report, CADTH 2007

Time and materials provided by AstraZeneca and IMS Brogan.
The study was funded by AstraZeneca Canada Inc.

AstraZeneca

ims | brogan
A UNIT OF IMS HEALTH