

Product Entry Sequence and Priority of Follow-on Drug Use: A Case Study of Second-Generation Antipsychotics with Long-Acting Injections

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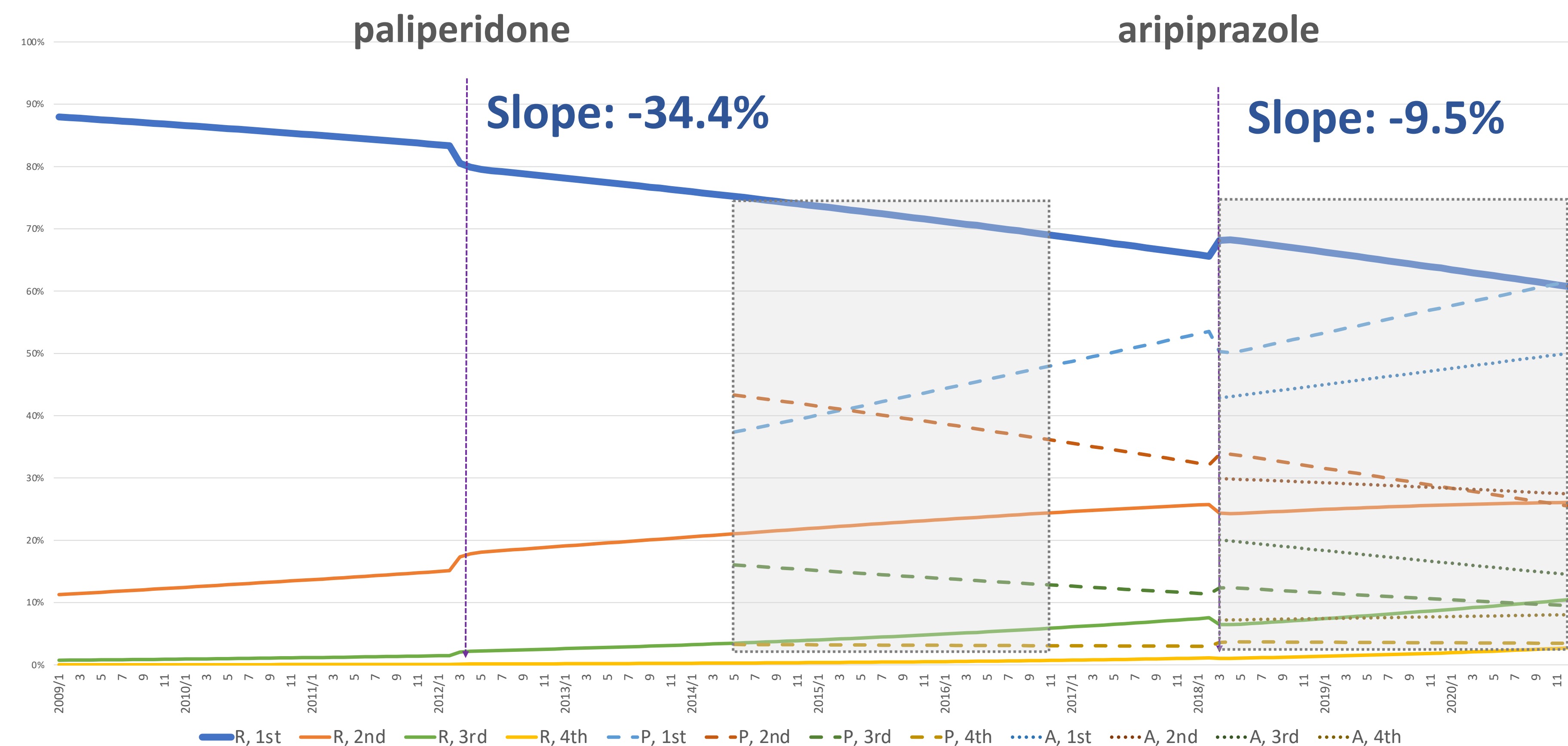
Objectives

- A dominant follow-on pattern has been observed in second-generation antipsychotics (SGA). However, the influence of entry order on priority choice among incident long-acting injection (LAI) users of follow-on drugs was unknown.
- This study aims to investigate the priority rank of three SGA LAIs, starting with risperidone as the pioneer, followed by paliperidone and aripiprazole.

Methods

- This was a population-based study where new users of SGA LAI with incident schizophrenia were selected between 2009 and 2020 using the National Health Insurance Research Databases (NHIRD) in Taiwan.
- The priority rank for each SGA LAI was defined as the treatment line in the first, second, third, or later position for each user.
- The monthly predictive probability (PP) of the priority rank was separately estimated for each SGA LAI using generalized ordinal logistic regression.
- Statistical analyses:
 - Interrupted time-series analysis: the monthly aggregates of priority choices for three SGA LAIs through with two entries, paliperidone and aripiprazole.
 - Chow test: compare changes in the monthly PP of the priority rank between paliperidone and aripiprazole.

Results



R: risperidone
P: paliperidone
A: aripiprazole

Coef.	New entries					
	Risperidone		Paliperidone		Aripiprazole	
	intercept	slope	intercept	slope	intercept	slope
Risperidone	0.8817	-0.0012	-0.0280	-0.0008	0.0286	-0.0003
Paliperidone	-	-	0.3687	0.0036	-0.0402	-0.000032
Coef. Coefficient						

	Paliperidone		Aripiprazole	
	Intercept	Slope	Intercept	Slope
1st rank	0.3692	0.0036	0.4261	0.0022
2nd rank	0.4370	-0.0024	0.3004	-0.0007
3rd rank	0.1611	-0.0011	0.2019	-0.0017
4th rank and later	0.0327	-0.0001	0.0715	0.0003

Conclusion

In the nuanced analysis of market competition based on priority rank, the second entry has a greater impact on existing SGA LAI and achieving the first rank than the third entry, even if the later entry represents a breakthrough innovation. Entry order plays a substantial role in market acquisition among follow-on drugs.