Daily doses and duration of gabapentin and pregabalin use for pain management among opioid users below and above 65 years old: Trends and patterns

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Background and objective

- Gabapentinoids (gabapentin and pregabalin) are increasingly prescribed for neuropathic pain, often as adjuncts to opioid therapy. While gabapentinoids are effective for pain management, emerging evidence highlights potential harms associated with their use, including increased rates of emergency department visits, hospitalizations, and fatal overdoses.
- Despite their widespread use and the aforementioned safety concerns, real-world data on gabapentinoid prescribing patterns particularly daily doses and treatment durations remain limited, especially in older adults
- This study investigates trends and patterns in the daily doses and duration of gabapentinoid use for pain management among opioid users aged below and above 65 years.

Methods

- A retrospective cross-sectional study was conducted using prescription data from a tertiary hospital in Malaysia between 2010 and 2020.
- All prescriptions for gabapentin and pregabalin that were prescribed opioid users age 18 and above for pain management during the study period were included.
- Data such as patient demographics, prescription details, doses, frequency and quantity supplied of gabapentin and pregabalin were analysed.
- Outcome measures included trends in mean daily dose, and days of supply of gabapentin and pregabalin, stratified by age groups (<65 years and ≥65 years).
- Descriptive statistics and linear trend analysis were performed using Stata v19.

Results-patient demographics

Table 1 Patient demographic

Descriptions		n	%
Total patients(n)		2338	
Gender			
	Female	1058	54.30
	Male	891	45.70
Age (years old)			
Mean (SD)	56.62(14.88)		
Age range	18-91		
Mode	55		
Ages <65 y.o		1160	66.97
Ages ≥65 y.o		572	32.03
Ethnicity			
	Malay	1062	45.42
	Chinese	642	27.46
	Indian	600	25.66
	Others	34	1.45
Number of prescriptions			
	Gabapentin	6148	91.3
	Pregabalin	586	8.7
Issuing departments			
	Anesthesia	2,683	39.84
	Medical	437	6.49
	Nephrology	371	5.51
	Orthopedic	1,337	19.85
	Palliative Care	459	6.79
	Rheumatology	338	5.02
	Surgical	357	5.30
	Others	754	11.20

Notes" Missing gender, n=389, missing age, n=606

The study analyzed 6,734 prescriptions for 2,338 patients, with 54.3% of patients being female and a mean age of 56.62 years (SD = 14.88). Gabapentin accounted for 91.3% of prescriptions (n=6,148), while pregabalin made up 8.7% (n=586).

Gabapentin daily doses in patients aged <65 and ≥65 years

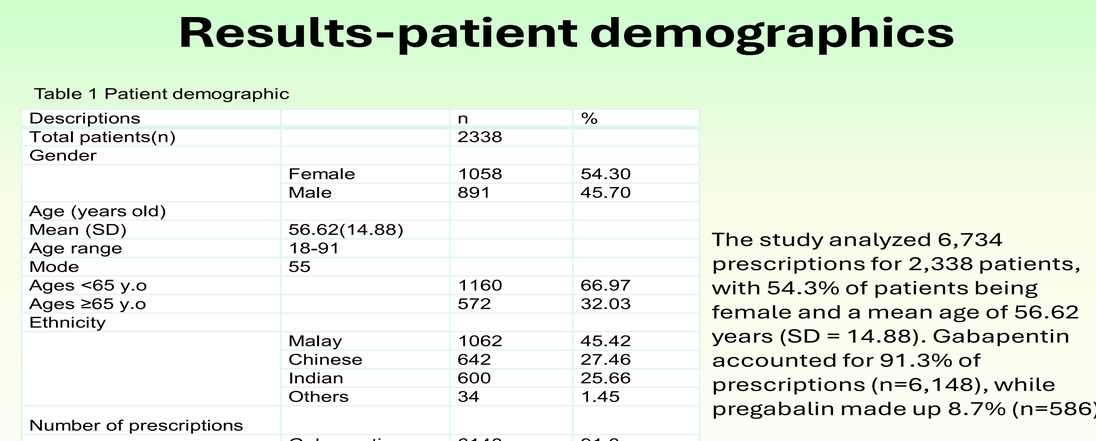

Figure 2 Mean daily doses of gabapentin across follow-up months by age group

For the gabapentin dose of ≥1800 mg/day, 3.74% *(n=83/2215)* of patients aged <65 years and 1.08% *(n=24/2215)* of those aged ≥65 years were titrated to this high dose. The mean follow-up duration to reach this dose was 5.03 months for patients <65 years and 4.77 months for those ≥65 years

Pregabalin daily doses in patients aged <65 and ≥65 years

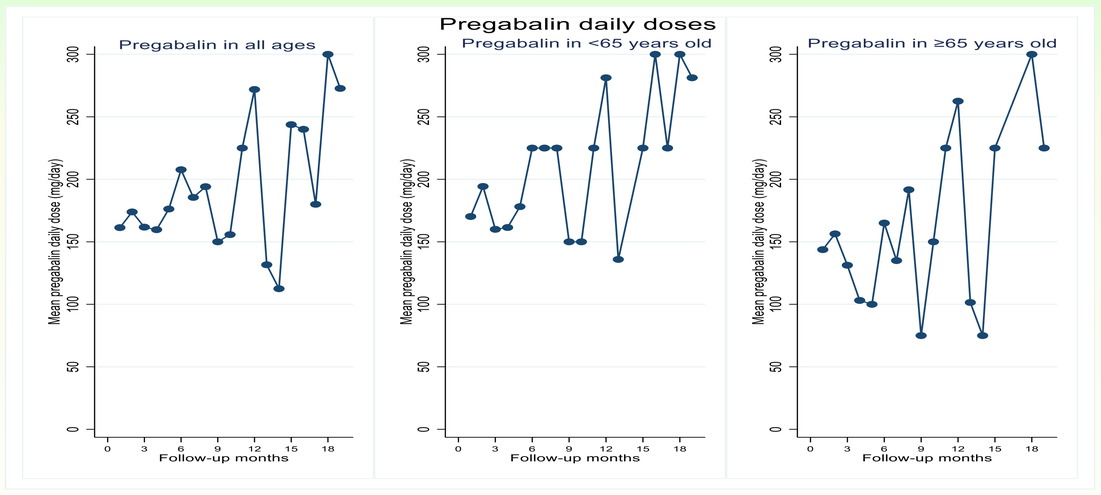

Figure 3 Mean daily doses of pregabalin across follow-up months by age group

For the pregabalin dose of ≥600 mg/day, 2.41% (*n=5/207*) of patients aged <65 years and 0.48% (*n=1/207*) of those aged ≥65 years were titrated to this high dose. The mean follow-up duration to reach this dose was 2.4 months for patients <65 years and 1 month for those ≥65 years

Gabapentin days supply in patients aged <65 and ≥65 years old

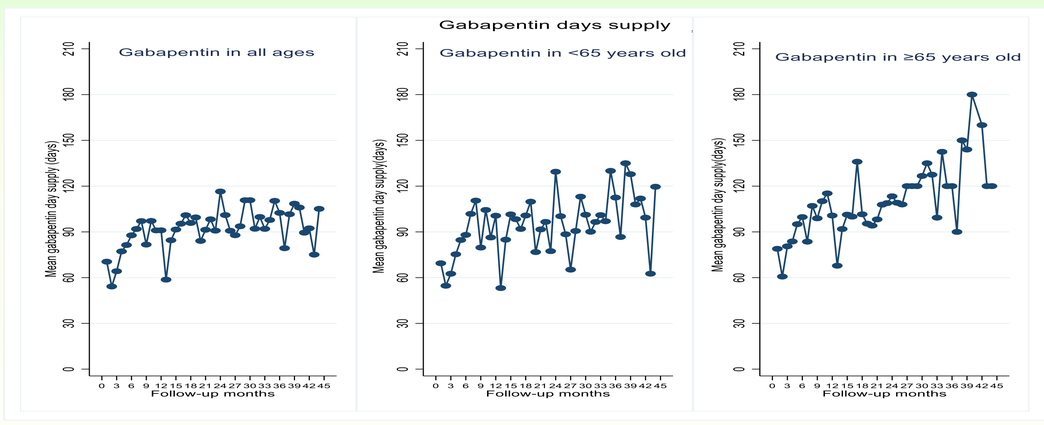

Figure 4 Mean days supply of gabapentin across follow-up months by age group

The above findings suggest that the younger age group experienced a sharper increase in supply over time, although the elderly started with slightly higher initial prescriptions.

Pregabalin days supply in patients aged <65 and ≥65 years old

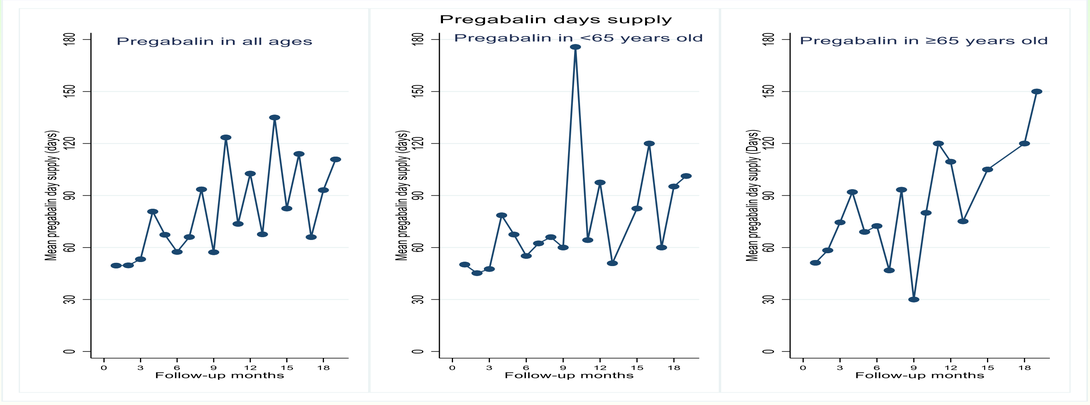

Figure 5 Mean days supply of pregabalin across follow-up months by age group

These results highlight a distinct prescribing trend for pregabalin, where older adults not only started with higher supplies at an initial follow up but also experienced the largest relative increase over time.

Conclusion

- Gabapentinoids, particularly gabapentin, show increases in both daily dose and duration of use, especially among older adults. Although these trends remain within normal therapeutic ranges, they highlight the need for careful and vigilant prescribing practices.
- Future studies should prioritize investigating gabapentinoid use among new users and incorporating clinical diagnoses to better understand the indications for their use. Research should also examine the effects of dose escalation and prolonged use of gabapentinoids on pain relief, tolerance and dependence symptoms.

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