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Pharmacy Regional Newsletter

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Take care dispensing medicines for Parkinson's Disease

A number of dispensing errors relating to Parkinson's medicines have been reported to the SPPG.

These incidents have involved pramipexole, co-BENELdopa and co-CARELdopa.

In three incidents the incorrect strength of pramipexole was dispensed, with one patient receiving 10 times the intended strength. While those involving co-BENELdopa or co-CARELdopa included incorrect strength, incorrect form and incorrect drug.

Please be vigilant when prescribing and dispensing these medicines.

Item dispensed	Correct item	Occurrence since 2020
Pramipexole MR 2.62mg	Pramipexole MR 0.26mg	Once
Pramipexole 0.18mg	Pramipexole 0.088mg	Twice
Madopar CR 100mg/25mg capsules	Madopar 100mg/25mg capsules	Twice
Madopar dispersible 50mg/12.5mg tablets	Madopar dispersible 100mg/25mg tablets	Once
Co-CARELdopa 25mg/250mg tablets	Co-CARELdopa 25mg/100mg tablets	Once
Co-BENELdopa 100mg/25mg capsules	Co-CARELdopa 25mg/100mg tablets	Once

Pharmacy Shelf–edgers are provided in Appendix 1, some pharmacies have found these useful to differentiate between products.

Factors which increase the risk of error

Pramipexole is a dopamine agonist available in two formulations: Immediate-release and Modified-release tablets.

The tablet is indicated in adults for treatment of the signs and symptoms of idiopathic Parkinson's disease and for symptomatic treatment of moderate to severe idiopathic Restless Legs Syndrome. The modified-release tablet is indicated for Parkinson's disease.

Both preparations of pramipexole are available in a range of strengths – this can give rise to selection errors as many of the pack strengths contain similar numbers. Some packaging states the strength in milligrams, so confusion can arise if the product has been prescribed in micrograms where a simple calculation would be necessary.

Table 1 provides the range of products available with the strength presented in milligrams and micrograms.

Co-BENELdopa and co-CARELdopa are both indicated for Parkinson's disease. Both are available in similar strengths and forms. The labelling format for the strength can vary between products, e.g. Lecado® brand of co-CARELdopa is labelled as 100mg/25mg (levodopa/carbidopa) in the same way as the Madopar® brand of co-BENELdopa is labelled 100mg/25mg (levodopa/benserazide) - this may cause confusion as Sinemet® uses the reverse, 25mg/100mg (carbidopa/levodopa).

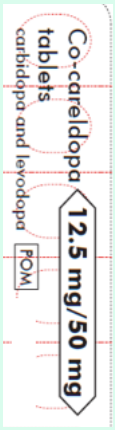


Table 2 and 3 present the range of products available for co-BENELdopa and co-CARELdopa.

Potential Harm

The patients in the incidents above did not experience any harm. However, dispensing errors involving Parkinson's medication such as inadvertent underdosing, overdosing, incorrect drug or form could cause issues for patients. In addition, dispensing errors may further lead to missed doses.

Optimal and continued medication management is critical for maintaining the quality of life of people with Parkinson's disease. If Parkinson's medications are not given, patients may be unable to swallow, causing a high risk of aspiration, they may be unable to speak or move and will likely become more dependent on others for assistance. Continuity of treatment is important, with irregular dosing increasing the chance for frozen gait that in turn increases the risk of falls and fractures[1].

The bioavailability of modified-release co-BENELdopa and co-CARELdopa is 60-70% that of the equivalent immediate-release product. A 30% dose reduction is usually advised if switching from a modified-release product to an immediate-release product, therefore a dispensing error involving a mix up in formulation could lead to under or overdosing.

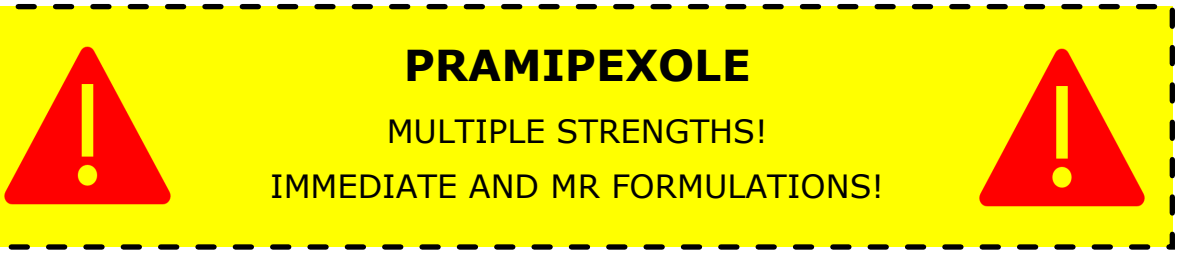
Parkinsons Medications: Formulations and Strengths

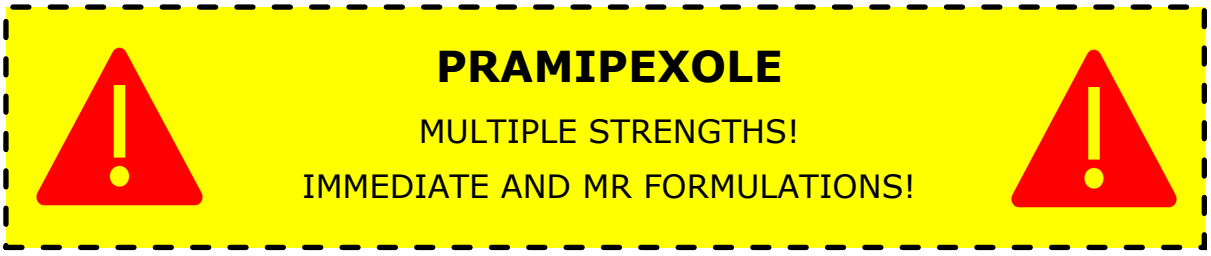
Table 1: Pramipexole		
Brand	**Form**	**Strength**
Mirapexin® **Generic pramipexole**	Tablets	**0.088mg** (88 micrograms)
		0.18mg (180 micrograms)
		0.35mg (350 micrograms)
		0.7mg (700 micrograms)
Mirapexin® **Pipexus®** **Generic pramipexole**	Modified-release tablets	**0.26mg** (260 micrograms)
		0.52mg (520 micrograms)
		1.05mg (1050 micrograms)
		1.57mg (1570 micrograms)
		2.1mg (2100 micrograms)
		2.62mg (2620 micrograms)
		3.15mg (3150 micrograms)

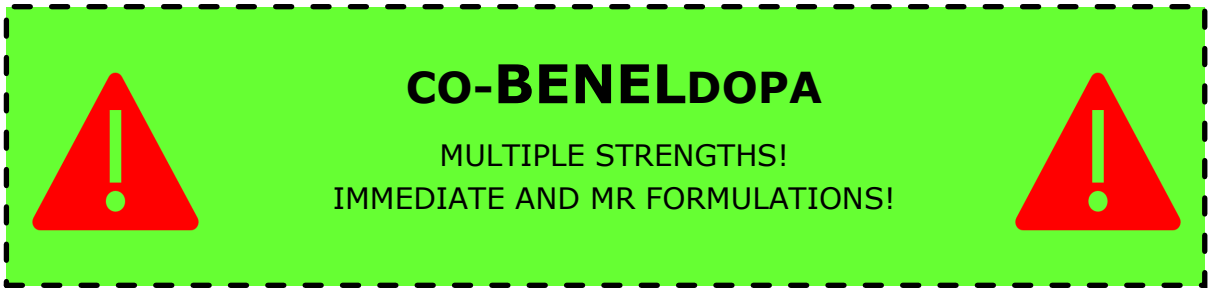
Table 2: Co-BENELdopa		
Brand	**Form**	**Strength**
Madopar® **Generic Co-BENELdopa**	Capsules	50mg/12.5mg
Madopar®	Capsules	100mg/25mg
		200mg/50mg
Madopar®	Modified-release capsule	100mg/25mg
Madopar®	Dispersible tablets	50mg/12.5mg
		100mg/25mg

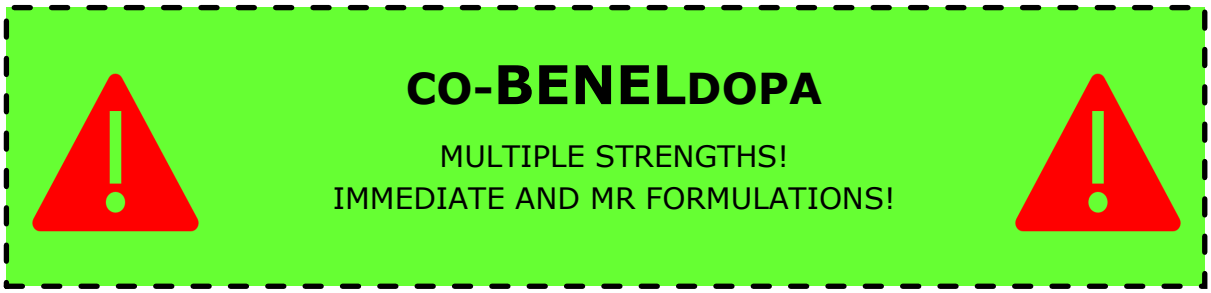
Table 3: Co-CARELdopa		
Brand	**Form**	**Strength**
Sinemet® **Generic Co-CARELdopa**	Tablets	12.5mg/50mg
		10mg/100mg
Sinemet® Plus **Generic Co-CARELdopa**	Tablets	25mg/100mg
Half Sinemet® CR **Caramet®**	Modified-release tablets	25mg/100mg
Sinemet® CR	Modified-release tablets	50mg/200mg
Lecado®	Modified-release tablets	100mg/25mg
		200mg/50mg

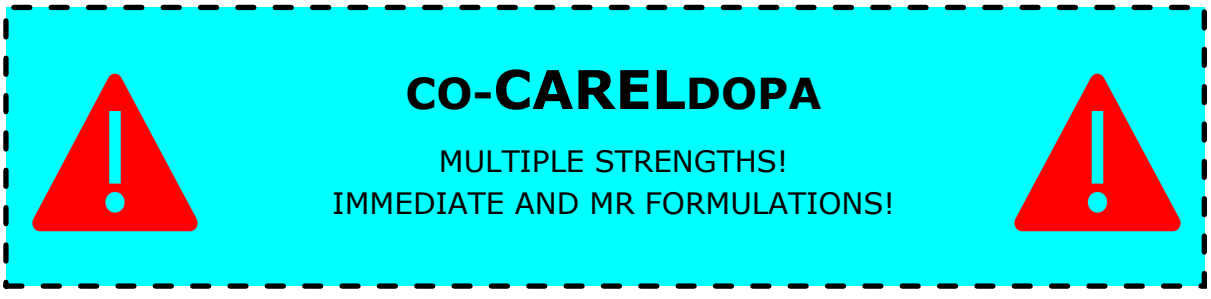
Appendix 1: Pharmacy Shelf Edges











References

1) PLOS ONE, 04 May 2022. Identifying rates and risk factors for medication errors during hospitalization in the Australian Parkinson's disease population: A 3-year, multi-center study. Bakker M., Johnson M. E., Core L., Mill D.N., Li X., Woodman R.J., Johnson J. L.

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