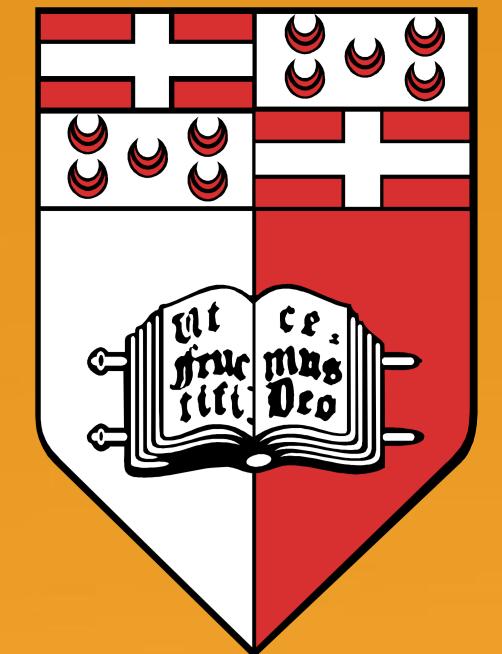
Chronopharmacology of Prednisolone in Rheumatoid Arthritis

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INTRODUCTION

The pharmacodynamic effect of prednisolone is often measured via cortisol and blood lymphocytes in the plasma – both of which exhibit circadian rhythms¹. In addition, rheumatoid arthritis (RA) is known to exhibit a diurnal rhythm, with patients experiencing most symptoms in the morning².

AIMS

- 1.To identify the relationship between pain levels and the time at which prednisolone is administered in rheumatoid arthritis
- 2. To obtain physician perspective on the chronopharmacology of prednisolone

METHOD **Ethics Approval** Following all necessary authorisations, ethics approval was granted by the University of Malta Research Ethics Committee Development of Assessment Tools An adapted version of the Short-Form McGill Pain Questionnaire was created, translated into Maltese and validated via face and content validity. Reliability testing to verify suitability for the study was undertaken Patient Recruitment 186 rheumatology patient files were assessed for eligibility in the study, of which only 4 patients attending the Rheumatology Outpatients Clinic at Mater Dei Hospital, Malta, met all pre-set criteria amd completed the whole study period Longitudinal Study Baseline values of pain scores reported by patients were compared against scores obtained after the same patients had taken prednisolone daily at 8AM for 1 week, and scores obtained after they had taken prednisolone daily at 8PM for 1 week Physician Perspective A sample of general practitioners and rheumatologists (n=23) was surveryed to obtain their perspective on the chonopharmacology of prednisolone in RA

RESULTS

The study cohort was female, between 55 and 64 years of age and on long-term prednisolone therapy for RA. A pairedsamples t-test showed a significant difference between morning and evening pain scores obtained at baseline and at week 1, when patients were taking prednisolone in the morning (p=0.008, p=0.033). Pain scores obtained were analysed using the Wilcoxon Signed Ranks and showed that a significant difference was present between evening pain scores of week 1 and week 2 (p=0.025), with scores being reduced in week 2, when patients were taking prednisolone in the evening.

	Not important	Of little importance	Moderately important	Important	Very Important
	Count	Count	Count	Count	Count
Prevention of worsening of condition	1	2	0	4	16
Limiting side effects	0	0	1	7	15
Pain relief	0	0	0	5	18
Control of inflammation	0	0	0	3	20
Reduction in morning stiffness	0	0	1	7	14

Table 1: Priorities in the treatment of rheumatoid arthritis as set by the physician population sampled (n=23)

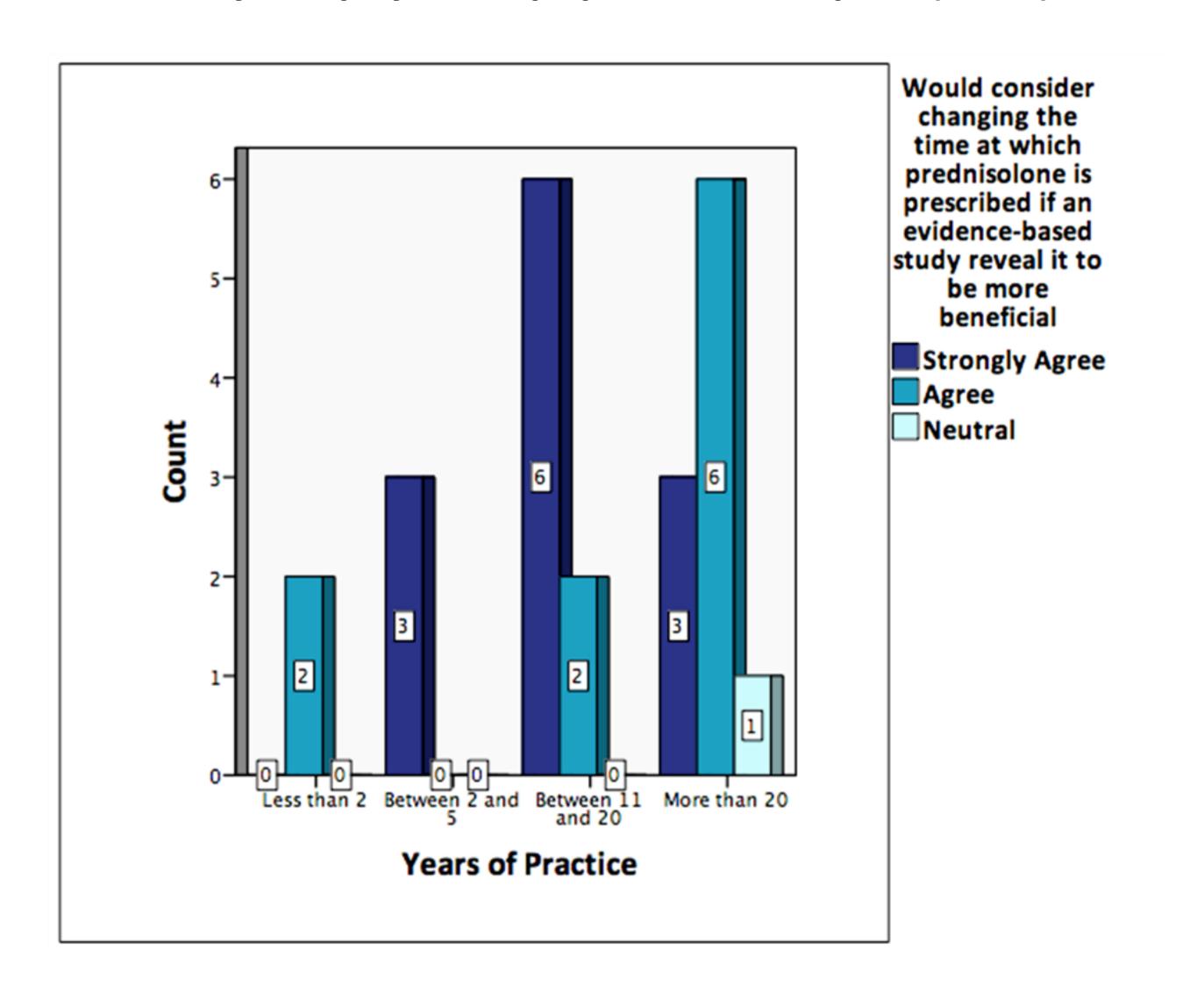


Figure 1: Cluster bar graph depicting physician openness to changing the time at which prednisolone is prescribed should an evidence-based study reveal it to be more beneficial to RA patients; results divided according to years of practice

CONCLUSION

There is room for further study on the time of administration of prednisolone in RA. Results were cohesive with prior knowledge, indicating the presence of a diurnal component in the variation of pain levels in RA. Physicians questioned were receptive to implementing change should this be more beneficial to patients.

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Reference:

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