

Journal of Health and Medical Sciences

Thilakarathna, Menaka. (2020), Awareness of Long-Term Prednisolone Use Among Patients Attending a Respiratory Clinic in Sri Lanka: A Clinical Audit. In: *Journal of Health and Medical Sciences*, Vol.3, No.4, 550-555.

ISSN 2622-7258

DOI: 10.31014/aior.1994.03.04.147

The online version of this article can be found at:
<https://www.asianinstituteofresearch.org/>

Published by:
The Asian Institute of Research

The *Journal of Health and Medical Sciences* is an Open Access publication. It may be read, copied, and distributed free of charge according to the conditions of the Creative Commons Attribution 4.0 International license.

The Asian Institute of Research *Journal of Health and Medical Sciences* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of Medicine and Public Health, including medicine, surgery, ophthalmology, gynecology and obstetrics, psychiatry, anesthesia, pediatrics, orthopedics, microbiology, pathology and laboratory medicine, medical education, research methodology, forensic medicine, medical ethics, community medicine, public health, community health, behavioral health, health policy, health service, health education, health economics, medical ethics, health protection, environmental health, and equity in health. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Journal of Health and Medical Sciences* aims to facilitate scholarly work on recent theoretical and practical aspects of Health and Medical Sciences.



ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide



Awareness of Long-Term Prednisolone Use Among Patients Attending a Respiratory Clinic in Sri Lanka: A Clinical Audit

Menaka Thilakarathna¹

¹National Hospital of Sri Lanka / Central Chest Clinic, Colombo, Sri Lanka

Abstract

Background: Prednisolone is recognized as one of the most commonly used, highly effective anti-inflammatory agent. It plays a pivotal role in the management of various disease conditions in pulmonology, such as interstitial lung diseases, sarcoidosis, bronchial asthma, chronic obstructive airway disease, allergic bronchopulmonary aspergillosis and even in some forms of extrapulmonary tuberculosis. However, this medication with great therapeutic importance is not free of risks. Long-term use and use in higher doses are known to cause various systemic adverse effects. Therefore, complying with recommended precautionary strategies is of paramount importance. **Objectives:** To assess awareness of correct use of prednisolone particularly among long-term, outpatient users. **Methodology:** A structured interviewer-based questionnaire was used to assess awareness of prednisolone usage in patients attending Central chest clinic, Colombo. Forty-one consecutive patients on long term prednisolone were selected from the clinic. The questionnaire was prepared based on recommendations and guidelines related to proper use of corticosteroids. Data were collected by the principal investigator. **Results:** This clinical audit highlighted the inadequacy of awareness about side effects and safety practices among patients on prolonged courses of prednisolone. **Conclusion:** Patients need to be educated more on adverse effects, safety measures and correct use to improve risk/ benefit ratio. Designing a steroid treatment card was identified as a potential method to optimize patient education, monitoring and adverse outcome prevention in long-term steroid therapy. Intended quality improvement will be evaluated by re-auditing the implemented protocol.

Keywords: Audit, Prednisolone, Steroid Treatment Card

INTRODUCTION

Prednisolone is a widely used corticosteroid in various inflammatory disorders involving pulmonary, rheumatological, renal, hematological, ophthalmologic, and gastrointestinal systems (Coutinho and Chapman, 2011). Despite well-known therapeutic benefits of this medication, it is not free of adverse health effects. Side effects of prednisolone include osteoporosis, hyperglycemia, weight gain, hypertension, cataract, immunosuppression, opportunistic infections and poor wound healing, particularly with high dose, long-term use (Liu *et al.*, 2013). Based on National Institute for Health and Care Excellence guidance high dose is defined as a dose of >5 mg oral prednisolone per day and long term as duration of treatment >1 month

Awareness of corticosteroid use and adverse side effects is of paramount important and should be emphasized to patients on long-term prednisolone treatment. Prednisolone should be prescribed at lowest possible dosages and the duration of treatment should be minimized as much as possible. Patients on treatment should be closely monitored for any possible adverse outcomes. Calcium and vitamin D supplementation, antiresorptive therapy (Lekamwasam *et al.*, 2012) and gradual tapering on withdrawal (Bancos *et al.*, 2015) are recommended precautionary strategies.

This knowledge should be clearly and thoroughly disseminated to the patients by the caring physicians. Correct use of prednisolone with recommended safety measures can result in reduction in rate of adverse effects leading to reduced patient morbidity, mortality, hospitalizations and health care cost (Liu *et al.*, 2013; Mundell, Lindemann and Douglas, 2017). This audit was designed to assess awareness about long-term prednisolone usage and to find out the level to which patients are engaged in safety practices among those who attending Central chest clinic.

METHODOLOGY

A structured, interviewer-based questionnaire consisting of 26 questions obtaining data regarding awareness of the patients regarding side effects and safety use of long-term prednisolone was prepared, based on internationally recommended therapeutic guidelines. Forty-one consecutive patients, who are on prednisolone >5mg per day for more than one month, attending central chest clinic were interviewed by the principal investigator. Collected data were tabulated and analyzed.

RESULTS

Selected patients (n=41) were on long term prednisolone for, non-specific interstitial pneumonitis (NSIP), hypersensitivity pneumonitis (HP), organizing pneumonia (OP) or sarcoidosis. Demographic details of the patients are summarized in Table -01. Majority of them were females (82.9 %). Median age of the sample was 51.39 years. Education status of the majority was ordinary level or below (56.1%).

Table 1: Demographic details of selected patients on long-term oral prednisolone therapy. (n=41)

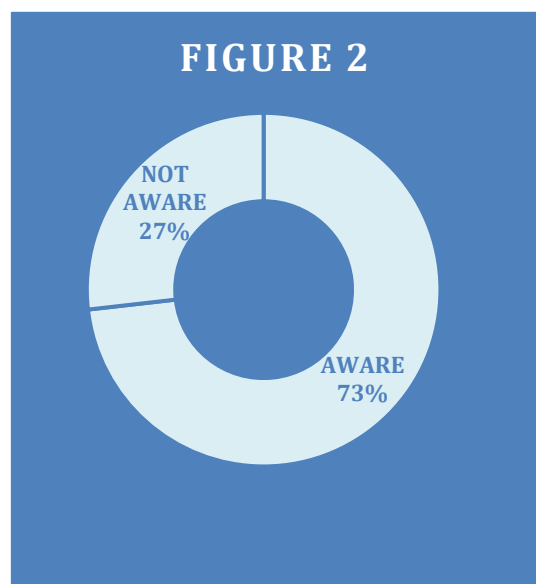
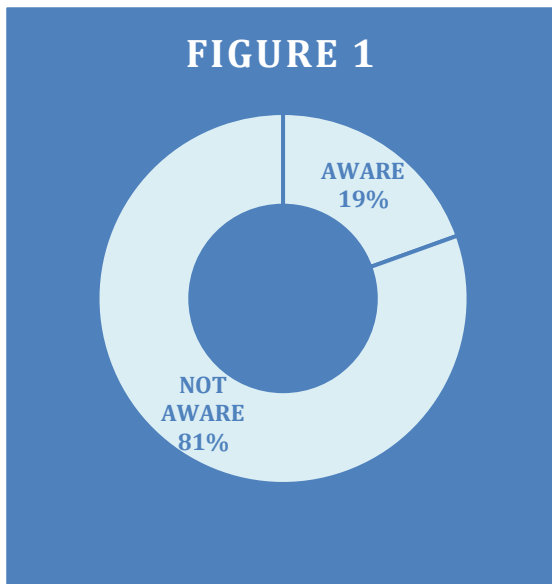
VARIABLE	FREQUENCY (%)
GENDER	
Male	7 (17.1)
Female	34 (82.9)
AGE GROUPS (YEARS)	
25-35	04 (9.75)
36-45	04 (9.75)
46-55	16 (39.02)
56-65	16 (39.02)
66-75	01 (2.43)
EDUCATION	
GCE Ordinary level	23 (56.1)
GCE Advanced level	13 (31.7)

University education	04 (9.8)
Postgraduate education	01 (2.4)

Out of patients included in the audit, only 19.5% (n=8) of patients were aware that they were on a medication of corticosteroid category (Figure 1).

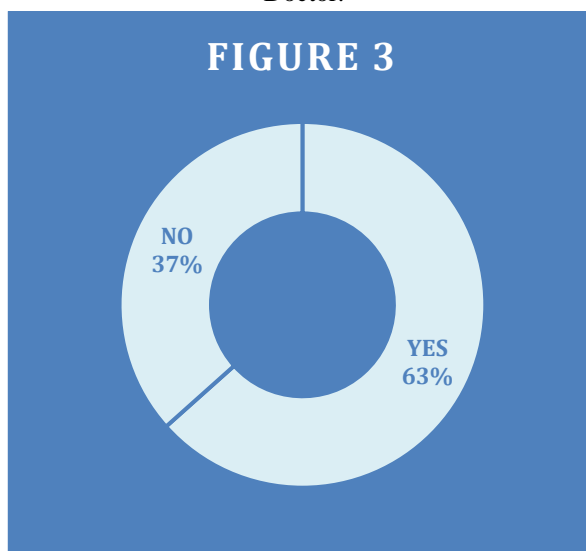
Figure 1: AWARENESS OF PREDNISOLONE AS A CORTICOSTEROID.

Figure 2: AWARENESS ABOUT THE PRESENCE SIDE EFFECTS OF PREDNISOLONE



Thirty patients (73.2%) were aware that long-term prednisolone can have adverse effects. (Figure -02) Twenty-six patients (63.4 %) accepted that they were educated in detail regarding prednisolone therapy and adverse effects by a doctor at the outset (Figure 3).

Figure 3: Percentage of Patients Who Received Detailed Advices Regarding Prednisolone Treatment from A Doctor.



Awareness of patients regarding prednisolone related adverse effects is illustrated in figure 4.

Figure 4: Frequency of Patients Aware About Different Side Effects of Long-Term Prednisolone Related Adverse Effects.

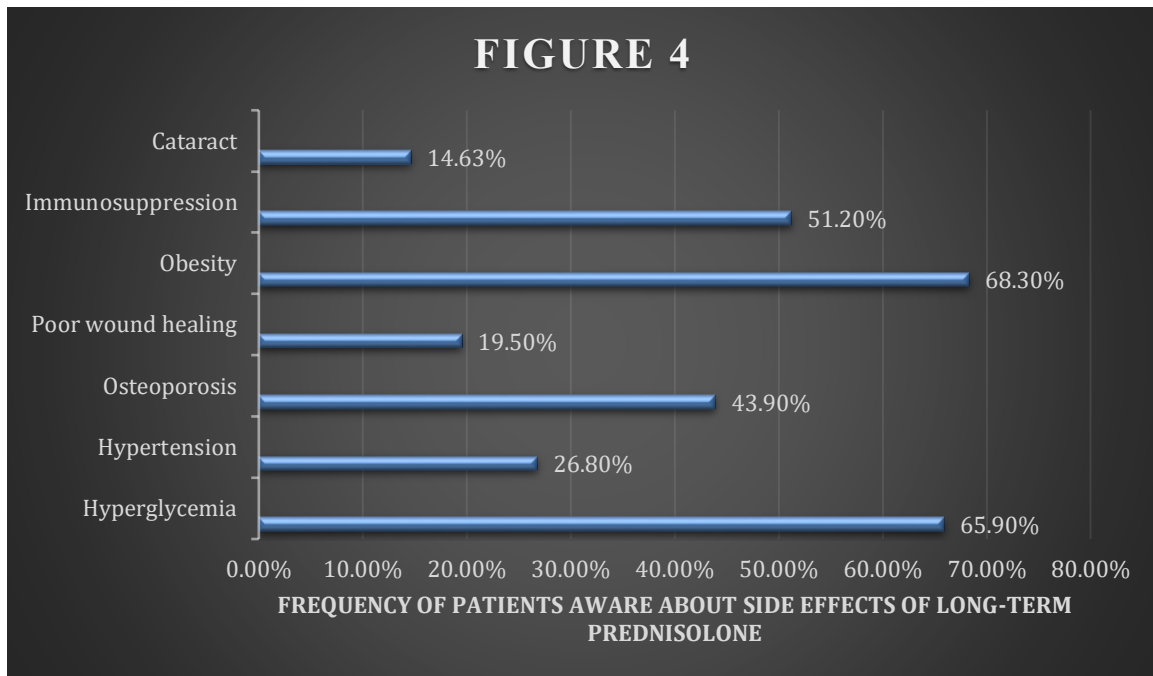


Figure 5 Demonstrates the frequencies of patients aware about the importance of medication safety issues and practices of long-term prednisolone therapy.

Figure 5: Frequency of patients aware about the importance of different safety measures and practices related to long-term prednisolone therapy.

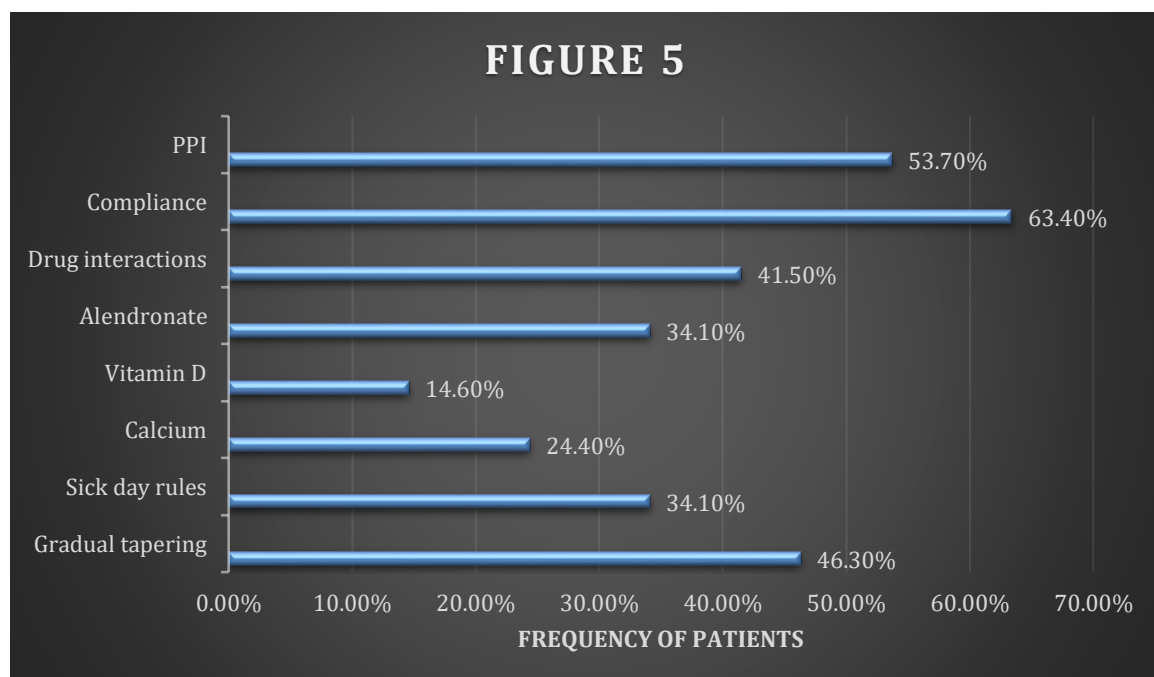
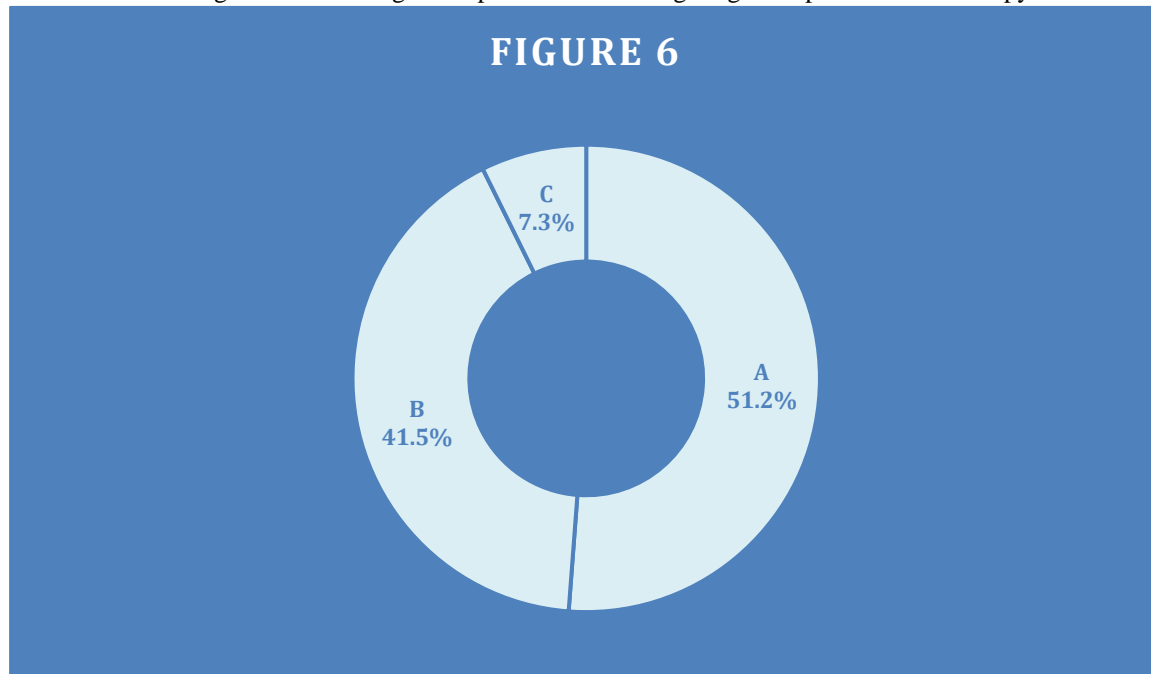


Figure 6 demonstrate details about general practitioner (GP) visits of the patients during last six months.

Figure 6: Visits to general practitioners during long-term prednisolone therapy.



A-GP was not informed regarding concomitant prednisolone treatment by the patient.

B-No GP visits during last six months.

C- GP was informed regarding concomitant prednisolone treatment by the patient.

DISCUSSION

Better patient awareness is of paramount importance when prescribing long term prednisolone considering its significant side effect profile. In our audit, majority of our patients (73.2%) considered oral prednisolone as a drug with devastating systemic side effects, but their awareness about individual side effects was unsatisfactory.

Only, 26.8%, 43.9%, 19.5%, 51.2% and 14.63 % of interviewed patients were aware that long-term prednisolone can cause hypertension, osteoporosis, poor wound healing, low immunity and cataract respectively. These figures correlate with that of previous studies conducted in this field (Mahdy *et al.*, 2017). The frequency of patients aware about most of the side effects was well below 50%. Number of patients aware about cataract as an adverse event was the lowest out of all categories. However, they had a better awareness about hyperglycemia (65.9%) and weight gain (68.3%), compared to other adverse effects.

Around two thirds of the sample were educated in detail regarding prednisolone therapy by a clinic doctor at commencement of the therapy. The proportion of patients who retained that knowledge was low which is probably due to the inadequate time spent for explanation in busy clinics and absence of a written document covering important points to read later. The British National Formulary recommends that all patients on corticosteroids for more than 3 weeks are issued with a steroid treatment card that they carry at all times (BNF, 2017). None the patients in this study have a steroid treatment card.

Overall knowledge about the importance of precautions and medication safety practices was dissatisfying. Percentage of patients who value the importance of safety measures was well below 50% in most of the categories. Only 46.35% and 34.1% of the patients consider gradual tapering and sick day rules are important. Poor knowledge about these measures can result in devastating outcomes like Addisonian crises (Bancos *et al.*, 2015). Only 24.4%, 34.1%, 14.6% and 53.7% of the patients knew the value of concomitant calcium, alendronate, vitamin D and proton pump inhibitors (PPI) respectively.

The proportion of patients knew that prednisolone can interact with other drugs was 41.5%. When a patient is seeking treatment from a GP while on long-term prednisolone therapy, other than the one who prescribed

prednisolone, that doctor need to be informed about the corticosteroid regime. This knowledge will greatly affect clinical decisions, treatment options and even drug doses of the GP. This practice was followed only by 7.3% of the patients interviewed in this study.

This audit highlights the inadequacy of awareness on side effects and precautionary measures of long-term prednisolone treatment. To overcome these issues a steroid treatment card was introduced, which is an essential measure need to be implemented in all health care institutions (Zeppetella, 1998; Rusby, 2010; BNF, 2017). This document contained details about adverse effects, safety practices and dosage and duration of therapy, in both Sinhala and Tamil languages. This will allow the patients to have a clear and better knowledge. Apart from that the card will be useful for healthcare professionals in emergency situations and GP visits. This card was issued to every patient on long-term prednisolone treatment and advised to carry it with them all times. Success of the strategy will be evaluated by a future audit.

We used an interviewer-based questionnaire for data collection. This method allows the interviewer to explain the questions and ensure that the participants are fully understood which may lead to increased reliability of the answers. However, the number of patients interviewed in the audit was relatively small and it was identified as a weak point.

CONCLUSION

Long-term prednisolone therapy is an important therapeutic option in clinical practice. Prevention of side effects is mandatory to increase the benefits of the therapy over hazards. This audit stress the need for better patient education on proper medication usage. Detailed steroid treatment card was introduced to disseminate the particular knowledge to the target patient group.

References

- Bancos, I. *et al.* (2015) 'Diagnosis and management of adrenal insufficiency', *The Lancet Diabetes and Endocrinology*. doi: 10.1016/S2213-8587(14)70142-1.
- BNF (2017) *BNF 73 (British National Formulary) September 2017*, *Bnf.org*.
- Coutinho, A. E. and Chapman, K. E. (2011) 'The anti-inflammatory and immunosuppressive effects of glucocorticoids, recent developments and mechanistic insights', *Molecular and Cellular Endocrinology*. doi: 10.1016/j.mce.2010.04.005.
- Lekamwasam, S. *et al.* (2012) 'A framework for the development of guidelines for the management of glucocorticoid-induced osteoporosis', *Osteoporosis International*. doi: 10.1007/s00198-012-1958-1.
- Liu, D. *et al.* (2013) 'A practical guide to the monitoring and management of the complications of systemic corticosteroid therapy', *Allergy, Asthma and Clinical Immunology*. doi: 10.1186/1710-1492-9-30.
- Mahdy, A. *et al.* (2017) 'Knowledge, attitude, and practice analysis of corticosteroid use among patients: A study based in the United Arab Emirates', *National Journal of Physiology, Pharmacy and Pharmacology*. doi: 10.5455/njppp.2017.7.1234409022017.
- Mundell, L., Lindemann, R. and Douglas, J. (2017) 'Monitoring long-term oral corticosteroids', *BMJ Open Quality*. doi: 10.1136/bmjopen-2017-000209.
- Rusby, E. (2010) 'Steroid treatment cards: Patient safety remains at risk', *British Journal of General Practice*. doi: 10.3399/bjgp10X515458.
- Zeppetella, G. (1998) 'Steroid treatment cards [8]', *British Journal of General Practice*.