Adverse effect profile of long term oral corticosteroid therapy in dermatology practice: Are we monitoring sufficiently?

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Abstract

Oral corticosteroids remain the most important agent in the management of immune mediated skin disorders. However, their long term use precipitates potentially serious adverse effects.

A cohort of 48 patients on long term oral steroid therapy attending a special dermatology clinic were reviewed in relation to prevalence of adverse effects as well as pattern and frequency of monitoring required, basic clinical parameters, blood chemistry and other special investigations.

More than 50% had maintenance prednisolone requirements of over 10 mg/d. Over 60% reported dyspepsia and low back pain. Approximately 40% developed diabetes. Other endocrine abnormalities were detected in over 20%.

Monitoring frequency of body weight, blood pressure, plasma glucose and blood counts were satisfactory. Monitoring of Bone Mineral Density (BMD), lipids and electrolytes required further improvement.

In conclusion, a high prevalence of adverse effects associated with long term oral corticosteroid therapy is seen in the cohort of patients studied. Close monitoring with a vigilant protocol is required for early detection and treatment of related complications.

Introduction

Despite the magnificent recent advancements in dermatologic therapeutics, glucocorticosteroids remain the single most important agent in the treatment of inflammatory and immune mediated skin disorders[1]. Most of these disorders, including the immunobullous and autoimmune diseases, leprosy reactions, etc. require the long term use of systemic gluco-corticosteroids in their treatment.

Chronic systemic steroid administration precipitates multiple health concerns. These include significant reduction in bone mineral density (BMD) leading to osteoporosis, suppression of immunity, precipitation of hypertension and dyslipidemia, gastro-intestinal ulceration, endocrinopathy secondary to suppression of the hypothalamo-pituitary axis, Cushing's syndrome, diabetes and cataract, as well as menstrual irregularities and neuropsychiatric symptoms[2].

Vigilant monitoring is a must for early detection of these adverse effects, in order to initiate appropriate treatment and preventive measures, minimizing the risks to the patient.

Objectives

To assess the pattern of monitoring and prevalence of adverse effects in patients on long term oral steroid regimes.

Methods

We carried out a cross sectional study on a cohort of 48 randomly selected patients receiving oral prednisolone at a dose of >5 mg/day for a minimum period of 3 months, attending the Immunobullous Disorders Special Clinic at National Hospital of Sri Lanka. The patients were reviewed over a period of 3 months. Data pertaining to prevalence of side-effects, frequency of monitoring defined parameters (body weight, blood pressure, blood chemistry) and frequency of referral for special investigations (ophthalmology, gastro-enterology and BMD assessments) were obtained through interview and clinic records.

Results

The cohort studied comprised 33 females and 15 males (age range 23-68 years). Duration of steroid therapy at time of inclusion in the study ranged from 3 to 84 months (mean 22 months). The agents used were prednisolone (44), methyl prednisolone (3) and dexamethasone (1). 26 (54%) patients had maintenance requirements of prednisolone over 10 mg/day.

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Table 1. Adverse effect profile of oral steroid therapy in the study population

	Number of patients	%
Dyspepsia	38	79%
Low back pain	31	64%
Diabetes	21	44%
Hypertension	9	19%
Cushingoid features	12	25%
Amennorrhoea	11	23%
Dermatophyte infections	7	14%
Cataract of eye	4	8%
Bone fractures	Nil	0%
Serious/recurrent systemic infections	Nil	0%
Neuro psychiatric symptoms	Nil	0%

Table 2. Frequency of monitoring

Clinical Parameter	*Monitored frequency*
Body weight	6 months – 1 year
Blood pressure	Monthly
Fasting plasma glucose	Monthly
Full blood count	6 months – 1 year
Urine full report	Yearly
Serum electrolytes	Rarely
Lipid profile	Rarely

11 patients (23%) had undergone routine ophthalmologic consultation. 5 (10%) underwent upper gastrointestinal endoscopy while 14 (29%) had their BMD assessed by means of Dual Emission X ray Absorptiometry (DXA) scans. Of the former, 2 had significant gastric erosions while only 6 in the latter group had T scores compatible with osteopenia or osteoporosis.

85% of the cohort studied was on proton pump inhibitors (PPI)/antacids. 70% received additional calcium and vitamin D supplements while 35% were regularly treated with oral bisphosphonates. All patients with diabetes/hypertension were on appropriate treatment. An adequate general medical history and details of concomitant medication were documented at onset in all cases.

Discussion

Current clinical guidelines on prevention and minimizing the complications of systemic glucocorticosteroids reiterate the importance of the physician/dermatologist having a sound knowledge of the clinical usage guidelines, pharmacology and adverse effects of these agents[2].

During the course of therapy, it is recommended that physical examination should include all systems pertinent to side effects caused by corticosteroids. Body weight and blood pressure need frequent evaluation at 1-3 months. Routine blood chemistry for glucose, electrolytes and serum lipids require evaluation at 6 monthly intervals while ophthalmologic examination and Bone Mineral Density (BMD) studies are

recommended annually[3]. Other studies including gastrointestinal and pulmonary evaluation may be dictated by specific acute situations[1].

In the cohort studied, a remarkably high prevalence of steroid related adverse effects was observed. This may be attributable to the high maintenance dose requirements of individual patients. Although over 60% of patients complained of dyspepsia and low back pain, only few had clinically significant gastro-duodenal involvement and osteopenia/osteoporosis. It is noteworthy that none suffered from fractures or significant infections.

The pattern and frequency of monitoring was adequate and conforming with current guidelines in most instances but less attention had been paid to evaluating serum electrolytes and lipids. BMD assessment had been carried out on less than 30% due to limited availability of the facility.

Enhancing awareness regarding current treatment and monitoring guidelines related to corticosteroid therapy, among all doctors attending to these patients, would be helpful in upgrading the quality of care provided.

Conclusion

A high prevalence of adverse effects associated with long term oral corticosteroid therapy is seen in the cohort of patients studied. Close monitoring with a more vigilant protocol is required for early detection and treatment of related complications.

References

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