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Research article

PREDNISOLONE INDUCED CUSHINGOID SYNDROME IN SEROPOSITIVE INFLAMMATORY ARTHRITIS: A CASE REPORT

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ABSTRACT

The main aim of the study is to report the drug related problem occurred in order to prevent its recurrence. A 23 year female patient presented with complaint of generalized swelling of body since 8 days, breathlessness since 3 days and fever since 3 days. She is Known case of seropositive inflammatory arthritis since last 1 year and taking prednisolone 20 mg b.i.d. She was having tachycardia, oedema, moon shape face. Her serum cortisol level is elevated and anti CCP antibodies were present hence diagnosed as prednisolone induced cushingoid syndrome with seropositive inflammatory arthritis. She was treated with Inj. Furosemide 4o mg IV b.i.d., Neb. Budesonide + Salbutamol every 6 hourly, Tab. Hydroxychloroquine 200 mg PO b.i.d., Tab. Methotrexate 15 mg PO Once a week, Tab. Calcium carbonate 500 mg PO o.d. and other symptomatic treatment. The prednisolone was withdrawn in tapered manner.

Key Words:- Prednisolone, Cushing's syndrome, inflammatory arthritis.

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INTRODUCTION

Cushing syndrome may be endogenous or exogenous, but clinically it is mainly due to the drugs. Cushing syndrome occurred during the corticosteroid therapy is purely the drug induced disorders (Romanholi DJ and Salqadol LR, 2007; Fleseriu M *et al.*, 2012). It is one of the widely noticed conditions in several hospitals across the globe which requires prompt medical attention to control its progression and prevent the complications. Drug induced disorders are widely preventable by optimizing the therapeutic regimens for an individual, the main aim of this case report is to enlighten the medical condition and assures the patient safety from drug induced disorders. Cushing syndrome is a condition characterized by high blood levels of cortisol or other exogenous compounds of glucocorticoids**.** The pathophysiological mechanism differs based on the cause of Cushing syndrome. Prolonged administration of exogenous glucocorticoid hormones are the most common cause of Cushing syndrome. Development of Cushingoid state is infrequent adverse drug reaction of endocrine system due to the use steroids like prednisolone (David N, 1995).

Aim

The main aim of the study is to enlighten the drug related problem and address such problem in order to prevent the occurrence of adverse event & optimizing drug therapy.

CASE PRESENTATION

A 23 years female patient presented with complaint of generalized swelling of body since 8 days, breathlessness since 3 days and fever (intermittent) since 3 days. She is known case of seropositive inflammatory arthritis since last 1 year and taking prednisolone 20 mg b.i.d. Lab data shows her serum cortisol level was elevated.

Past Medications

- Tab Indomethacin 50 mg P.O. b.i.d.

- Tab Prednisolone 10 mg P.O. b.i.d.
- Tab Pantoprazole 40 mg P.O. b.i.d.

Investigations

- Hb-12.2gm%
- RBC-3.2million/cumm
- TLC- 6,800cells/cumm

ConfirmatoryTest

- ✓ RAFactor $^{+ve,}$
- ✓ Anti-CCPAntibody66.65U/ml·
- ✓ Serumcortisol-35.9mcg/dl

RA Factor is important marker to diagnose the rheumatoid arthritis condition, Anti citrullinated peptide antibody is supportive test for seropositive conditions for arthritis. Elevated serum cortisol levels are significant to differentially diagnose the Cushingoid condition, which were found to be elevated after the prednisolone administration.

Treatment

1. Inj Furosemide 40 mg I.V. 1-1-0
2. Inj Pantoprazole 40 mg I.V. 1-0-1
3. Budecort + Salbutamol Neb. 6 hrly.
4. Tab. Paracetamol 500 mg P.O. 1-1-1
5. Tab Hydroxychloroquine 200 mg P.O. o.d.
6. Tab Methotrexate 15 mg P.O. once a week
7. Tab prednisolone 5 mg P.O. b.i.d.

As patient was suffering from anasarca (out ruled from obesity) the Furosemide was prescribed to reduce edema, Budecort + Salbutamol were given to treat breathlessness symptomatically, Hydroxychloroquine was prescribed as anti-inflammatory agent at dose of 200mg. Methotrexate was prescribed as conventional chemical. Disease-modifying antirheumatic drug to modify the course of inflammatory arthritis and slow the progression.

Discharge Medication

- Tab Methotrexate 15 mg P.O. once weekly
- Tab Hydroxychloroquine 200mg P.O. b.i.d.
- Tab Prednisolone 5mg P.O. b.i.d.

DISCUSSION

Patient appeared with symptoms of Cushing's syndrome (Anasarca, Moon shaped face, red thin skin, fever, body pain). After the use of prednisolone for Rheumatoid Arthritis over 1 year duration, The patient was not taking any other medication which interact with prednisolone through cytochrome P450 to raise the cortisol level. The prednisolone substituted with other anti-inflammatory agents. The similar condition was observed in the case report of siddarama (Siddarama R *et al.,* 2015; Paul EM *et al.,* 2016).

CONCLUSION

Prednisolone was prescribed for Arthritis which induces Cushings syndrome, the condition is reversible if drug is withdrawn, and prednisolone should be withdrawn in tapering manner over a period of 4 months.

Therapeutic Intervention

The Methotrexate is prescribed for long term use, as it is Dihydrofolate reductase inhibitor it may lead to the folic acid deficiency & anemia in the patient, the folic acid supplement should be prescribed on discharge medication.

Learning Points

- Drug induced condition are preventable, Hence optimization of therapeutic regimen is very crucial in health care system.
- Switching to other class of drugs or withdraw of drug is best possible management of drug induced conditions.
- The clinical pharmacist has great opportunity to monitor the patient and identify the drug related problem and adopt the best practice to minimize them (Findling JW and Raff H, 2014).

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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Nil

CONFLICT OF INTEREST

No interest

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