Journal of Pharmacy Practice and Community Medicine.2016, 2(3):96-99• http://dx.doi.org/10.5530/jppcm.2016.3.7 e-ISSN: 2455-3255

CASE REPORT

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Self-Medication of Corticosteroids: A Life Threatening Case Report from Pakistan

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Received: 30 January 2016;

Accepted: 21 March 2016

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Abstract

A 70 years-old male patient with poor socioeconomic status seeks medical treatment from a quack for a minor injury. The Quack assured him to improve his health while offering him a miracle medicine that went wrong. A registered medical practitioner made a working diagnosis of the mismanaged early stage cellulitis and patient was shifted to a specialized hospital with subsequent deterioration of his health due to septicemia leading to unconsciousness. Pertinent medical history determined patient's self-medication habits for the last 10 years including Prednisolone and Tetracycline for upper respiratory tract disorders–identified as per medicine color and shape. A number of potent antibiotics were tried but in vain. Finally the patient was diagnosed with corticosteroid induced adrenal suppression which shifted a minor injury into life threatening condition. In ICU, physician added injection Dexamethasone which regains patient's consciousness within 3–4 hrs. It is concluded that in a country like Pakistan where provision of prescription medicines are similar to over the counter medicines, self-medication driven disease mismanagement coupled with treatment and procedural qualms for uneducated patients, mightsteer a minor health event to a life-threatening incident.

Key words: Self-medication, Corticosteroid, Cellulitis, Septicemia, Quackery.

INTRODUCTION

Self-medication, a form of self-care, includes securing medicines without prescription, resubmitting old prescription to acquire medicines, sharing medicines with relatives or members of one's social circle or using residual medicines.[1] For developing country like Pakistan where widespread access to health care is a far-reaching cry, patients often resort to self-medication for most of their ailments, driven by lack of access to health care system, cultural and financial constraints.[2] Number of studies has reported that self-medication may cause un-due delay in seeking health care services leading to, at some instances, irreversible damage due to some life threatening drug interactions.[3] Corticosteroids are among highly abused drugs, freely available at local medical stores without prescription in developing countries like Pakistan.[4] Being a potent anti-inflammatory drug, it is commonly prescribed, irrationally, by registered medical practitioners as well as by quacks for getting quick relief with the aim to ascertain their healing abilities-an attempt to satisfy customers for future visits.[4] By raising plasma glucose levels, corticosteroids provide the body with energy, it requires, to combat stress conditions like trauma, fright, infection, bleeding, or debilitating disease.[5] Besides providing fruitful effects, it can cause unwarranted physiological changes,

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such as a modest rise in blood pressure, thromboembolism, necrotizing angititis, cardiac arrhythmias, myopathy, spontaneous fractures, glaucoma and immunosuppression. It also impairs wound healing and makes the skin fragile.[5] Thus, having profound risk of adverse drug reactions, corticosteroids should always be prescribed by a registered medical practitioner and dispensed under the strict supervision of a qualified pharmacist. The present study provides strongest clinical evidence of life-threatening consequences related to chronic use of corticosteroids for a minor injury without supervised medical care.

Case Presentation

A 70 years old male with a poor socioeconomic status was struck by a minor roadside accident. Initially, after injury, he visited nearby quack for primary care. The quack started with an unhygienic dressing and gave some un-labeled medicine to be used for couple of days. However, area of that simple lesion increased with the passing time. Later, quack prescribed Co-Amoxiclav 1 g in OD dose and assured that the condition would be absolutely fine after its use. The quack assured improvement by claiming the medicine a "miracle", but the acclaimed miracle did not work at all rather the condition became worse. Owing to shear desperation the patient went to a local registered medical practitioner and was diagnosed with early stage cellulitis. Patient was prescribed Cefuroxime along with supportive therapy for seven days. Conversely, if therapy doesn't work, patient was suggested to go for an IV antibiotic therapy for 5 days. However, the condition started to deteriorate further with profound swelling and development of nodules and verrucae, thus was referred to a dermatologist, who immediately recommended the patient to a surgeon for debridement. After the surgery, patient was started on high potency Imipenem, nevertheless, situation didn't improve, rather patient developed high-grade fever leading to un-consciousness. Thus patient's attendant decided to shift the patient to a specialized hospital. The relevant lab values and culture report are shown in Table 1. Macro-graphic clinical presentations of patient's physical signs are shown in Figure 1.

Past medication history

Habitually, patient resort to self-medication of Prednisolone 5 mg twice daily and Tetracycline 250 mg twice daily for mild chest complaints and had been in this practice, time and again, for the last ten years. More interestingly, patient could only identify the color of medicine-red black capsule and oval shape small tablets.

Present medical history

Physically, the patient looked slim with puffy face. In a specialized hospital, the medical specialist diagnosed patient with severe septicemia due to complicated cellulitis on his right foot. In Intensive Care Unit (ICU), physician prescribed Meropenem (1 gm BD) and Amikacin sulphate (250 mg BD) along with supportive therapy. Patient was still not recovering to his state of consciousness. Then based on past medication history, Dexamethasone injection was also added to previous therapy, patient became stable within 3-4 hrs.

DISCUSSION

According to published reports, self-medication has the potential to do more harm such as drug dependency, masking of disease signs and symptoms, precarious drug interactions/adverse reactions, disease complication and delaying diagnosis.[6] Due to lack of financial resources to bear physician's consultation fee and medication costs, the quality medicines and health care services remain elusive for majority of the patients, ultimately resorting towards resource saving mode that is self-medication.[7] Keeping in view the sorry figure of health care services coupled with socioeconomic constraints in Pakistan, the current report is a daunted example of chronic self-medication of corticosteroid for a minor conditionthat not only causes undue discomfort to the patient in form of pain and finances but also complicated the minor condition demanding hospitalization in a specialized care. Chronic use of corticosteroids can increase patient's susceptibility to develop serious infections.[8] Therefore, it is highly likely; that patient minor injury coupled with corticosteroid self-medication not only aggravated injury related infection but also made infection beyond clinical comprehension. Therefore, to compensate for a diminished adrenocortical response, caused by prolonged corticosteroid treatment, such as any significant intercurrent illness, trauma, or surgical procedure requires a temporary increase in corticosteroid dose, or if already stopped, a temporary re-introduction of corticosteroid treatment.[9] Thus, adding dexamethasone to treatment regimen resulted in restoration of patient's consciousness. Additionally, to further add insult to injury, prolonged use of tetracycline have been associated with thrombocytopenia, neutropenia and eosinophilia in addition to microbial resistance.[10] Presumably the true spirit of pharmacy practice services needs to be exploited in preventing drug abuse or misuse in a society. Additionally, drug regulatory authorities must ensure the full time presence of licensed pharmacists in safeguarding rationale drug dispensing process.[1]

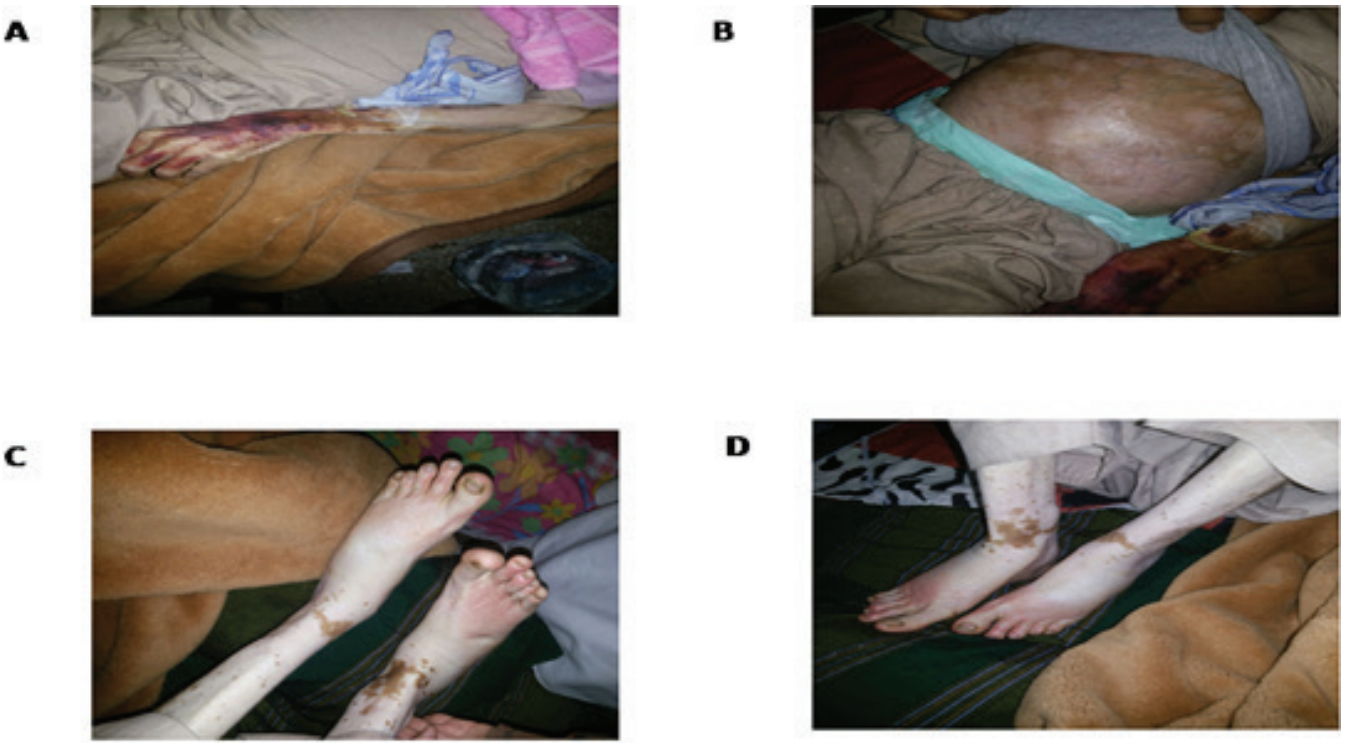

Figure 1: Clinical presentation of patient's physical signs of mismanaged cellulitis. A & B showing early stage of septicemia while C & D showing early stage of cellulitis.

Table 1: Clinical laboratory findings

Parameter	Normal Range	Patient Value	Parameter	Normal Range	Patient Value
Hemoglobin	13.5-17.5 g/dL	11.8	**Cholesterol**	<200 mg/dL	165
Hematocrit	41-50%	42	**HDL**	30-70 mg/dL	48
RBCs	4.5-5.5 x 10^6/ml	4.1	**LDL**	65-180 mg/dL	138
MCV	80-100 μm^3	83	**Triglycerides**	<160 mg/dL	151
MCH	25.4-34.6 pg/cell	27.1	**AST (SGOT)**	11-47 IU/L	37
MCHC	31-36% cell	33	**ALT (SGPT)**	7-53 IU/L	41
ESR	20 mm/hr	**27**	**Total Bilirubin**	0.1-1.0 mg/dL	0.8
Platelets	150000-400000 /mm^3	210000	**Direct Bilirubin**	0.0-0.3 mg/dL	0.3
WBCs	7000-10000 /mm^3	**55000**	**Prothrombin Time**	10-13 sec	13
Calcium	8.6-10.3 mg/dL	7.9	**Serum Creatinine**	0.5-1.7 mg/dL	1.9
Sodium	135-147 mEq/L	137	**BUN**	8-25 mg/dL	22
Potassium	3.5-5 mEq/L	4.6	**Uric Acid**	2.0-8.0 mg/dL	7.1
Albumin	3.2-5.0 g/dL	3.1	**O2 Saturation**	94-100%	87
Serum Osmolarity	280-300 mosm/kg	260	**Partial CO2**	33-44 mmHg	42
Anion Gap	7-16 mEq/L	8	**Partial O2**	75-105 mmHg	71
Bicarbonate:			**Blood Glucose:**		
Arterial	21-28 mEq/L	20	**Fasting**	65-115 mg/dL	69
Venous	22-29 mEq/L	19	**Random**	<180 mg/dL	117
Culture Report	*Pseudomonas aeurogenosa*				

CONCLUSION

It is concluded that in a country like Pakistan where provision of prescription medicines are similar to over the counter medicines, self-medication driven disease mismanagement coupled with treatment and procedural qualms for uneducated patients, mightsteer a minor health event to a life-threatening incident. Presumably the true spirit of pharmacy practice services needs to be exploited in preventing drug abuse or misuse in a society. Additionally, drug regulatory authorities must ensure the full time presence of licensed pharmacists in safeguarding rationale drug dispensing process.

ACKNOWLEDGEMENT

Authors are grateful to hospital management and the patient for his willingness to share his medical and laboratory reports also the pictures for medical and research purpose.

CONFLICT OF INTEREST

Authors declare no conflict of interest.

ABBREVIATION USED

ALT: Alanine Transaminase; AST: Aspartate Transaminase; BD: Twice a Day; BUN: Blood Urea Nitrogen; ESR: Erythrocyte Sedimentation rate; HDL: High Density Lipoprotein; ICU: Intensive Care Unit; LDL: Low Density Lipoprotein; MCH: Mean Corpuscular Hemoglobin; MCHC: Mean Corpuscular Hemoglobin concentration; MCV: Mean Corpuscular Volume; OD: Once a Day; RBC: Red Blood Cells.

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Cite this article as: Hashmi FK, Saleem Z, Saeed H, Verma AK. Self-Medication of Corticosteroids: A Life Threatening Case Report from Pakistan. J Pharm Pract Community Med. 2016;2(3):96-99.