

## Gatifloxacin-induced Purpura – An Unusual Adverse Drug Reaction

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### Abstract

*Purpura is a rare adverse drug reaction to Gatifloxacin. We describe a 70-year-old COPD patient who developed purpura over the right flank, inguinal area, and scrotum, with mild pruritus and burning sensation after fourth dose of Gatifloxacin. The drug was withdrawn immediately, and the patient was treated with oral prednisolone, local emollient and H<sub>1</sub> antihistamine. Purpura, however persisted even after one month of stopping Gatifloxacin. Three months later the patient reported complete disappearance of the bluish discolouration over the abdominal and inguinal areas.*

**Key words:** Purpura, Gatifloxacin, Adverse drug reaction.

### Introduction

The simplest definition of an adverse drug reaction (ADR) is that, 'it is an event that is noxious and unintended that occurs after doses of a drug have been administered which are within the range normally recommended for therapeutic purposes'<sup>1</sup>. ADRs are a major cause of human suffering and increased health care costs world-wide<sup>2</sup>. The cutaneous ADRs are manifestations in majority of such cases.

Gatifloxacin is a third generation broad spectrum 8 methoxyflouroquinolone. Several clinical trials have shown Gatifloxacin to be a safe drug. It is approved by US Food and Drug Administration for treatment of infections in adults 18 years or older. All available information on ADRs to flouroquinolones comes from clinical trials or spontaneous reports, which is not sufficient.

The common adverse effects reported with fluoroquinolones are GI disturbances, nervous system complaints (dizziness, headache), allergic reactions (skin rash, pruritus), photosensitivity, and phototoxicity<sup>3</sup>. No case of purpura has been reported with Gatifloxacin till date.

Gatifloxacin has the convenience of once daily dose, lesser drug interactions than other fluoroquinolones<sup>4</sup>, and better pharmacokinetics and tolerability profile. It is considered an ideal quinolone in the management of various infectious diseases<sup>5,6</sup>. To the best of our knowledge, there

are no reported cases of severe allergic reaction like purpura, with Gatifloxacin till date.

### Case report

A 70-year-old, male, was admitted to our hospital with the diagnosis of COPD with acute exacerbation. He was given Inj. Deriphylline (1 amp, IV x 8 hrly), inhaled beclomethasone (600 mcg/day), inhaled salbutamol (800 mcg/day), and Gatifloxacin (200 ml/400 mg) IV once daily over 1 hr. He had been on tab. Deriphylline and salbutamol rotacaps for the last 1 year off and on. However, Gatifloxacin was prescribed for the first time. After the fourth dose of Gatifloxacin, he developed bluish discolouration of skin over the right flank, inguinal area, inner side of thighs, and scrotum, with mild pruritus and burning sensation. On examination, non-palpable purpura was present in the above-mentioned areas; it did not blanch on pressure. Local temperature was not raised, and it was not painful.

On investigation, haemogram, renal function, liver function, ABG, platelet count, bleeding time, clotting time were within normal limits. Chest radiograph was suggestive of COPD.

The patient was seen by a dermatologist, and a diagnosis of drug-induced, non thrombocytopenic purpura was made. The patient was treated with topical corticosteroids, systemic steroids (oral prednisolone in dose of 40 mg OD) for 2 weeks, local emollient and H<sub>1</sub> antihistamine

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(Fexofenadine 180 mg OD for 7 days). In spite of cessation of Gatifloxacin, purpura persisted for 1 month, but it was no longer pruritic and had decreased considerably. The patient is now under regular follow up, and is asymptomatic.

## Discussion

Purpura is defined as circumscribed collection of blood  $\geq$  0.5 cm in diameter. Morphologically it may be of several types as ecchymoses, petechiae, palpable purpura, pigmented type, or itching purpura. A wide spectrum of cutaneous ADRs are reported with fluoroquinolones such as Stevens–Johnsons Syndrome with Levofloxacin<sup>7</sup>, pemphigus vulgaris<sup>8</sup>, exfoliative dermatitis with Trovafloxacin<sup>9</sup>. But no report on Gatifloxacin-induced purpura is ever reported. Thus a 'signal' is required to be generated for such an ADR.

Aetiology of purpura may be abnormal haemostasis, vascular fragility, valsalva manoeuvre, vasculitis, or trauma. Drug-induced purpura is due to direct capillary damage or hypersensitivity reactions. Differential diagnoses include non-plapable petechiae, systemic vasculitis, coagulation disorders, etc.

According to WHO criteria, temporal association should be present between drug use and drug reaction to prove its role; it should disappear partially when drug is stopped (de-challenge), and reappear when drug is used again (re-challenge). But it is difficult to do rechallenge in clinical practice, so one's clinical judgement has to be relied upon.

In the present situation, with increase in incidence of respiratory tract infections, Gatifloxacin due to its wider coverage, and comparatively safe profile is considered an effective and better fluoroquinolone in clinical practice. It is indicated for treatment of RTI, UTI and sinusitis. However,

our case report warrants that monitoring of the adverse effects – of newer drugs – particularly of serious nature, is important. Recently, the US FDA has developed a Medwatch Program (1993) mainly for reporting of adverse drug reactions<sup>10</sup>. Physicians should be educated about newer adverse reactions and encouraged to report them. The best way to decrease ADRs is to use minimum number of drugs, to use them in optimum dosage, and to spread awareness about adverse reactions.

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