

# Anaphylaxis caused by pegylated recombinant human granulocyte colony-stimulating factor

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## Article Information

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## Abstract

## Introduction

Pegylated recombinant human granulocyte colony-stimulating factor (PEG-rhG-CSF), is commonly used to prevent and/or treat neutropenia caused by tumor chemotherapy and radiotherapy with reduced clearance, increased plasma half-life, sustained biologic activity, and good safety. PEG-rhG-CSF anaphylaxis was rare.

## Case report

A 55-year-old male Non-Hodgkin lymphoma patient appeared with chest tightness, increased heart rate, and decreased blood pressure after taking PEG-rhG-CSF used as a primary

treatment for neutropenia caused by chemoradiotherapy. The patient's anaphylaxis is likely due to PEG-rhG-CSF.

## Management and outcome

0.9% sodium chloride 250 mL and dexamethasone sodium phosphate injection 5 mg were carried out. After close observation, the symptoms were improved. Two months later, the patient was readministered with PEG-rhG-CSF and anaphylaxis reoccurred. After the last contact with PEG-rhG-CSF, the patient was prescribed rhG-CSF for many times and did not experience any adverse reactions.

## Discussion

PEGylated drugs are not free of risk and immune-mediated adverse events are of concern. PEG is a substance capable of triggering an immune response. The mechanism of PEG involved IgE-mediated anaphylaxis and non-IgE-mediated anaphylaxis, and requires further research. PEGylated drugs are not free of risk and immune-mediated adverse events are of concern.

## Keywords

[Anaphylaxis](#), [polyethylene glycol](#), [recombinant human colony-stimulating factor](#), [neutropenia](#)