

Effects of granulocyte colony-stimulating factor therapy for osteogenesis imperfecta: a case report

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ABSTRACT

Introduction: Osteogenesis imperfecta (OI) is a genetic disorder of increased bone fragility and low bone mass. OI type IV.

Materials and methods: We examined the safety and effectiveness of a low dose of analog granulocyte colony-stimulating factor (G-CSF) in a 15-year-old girl OI type IV. G-CSF 5 µg/kg was given subcutaneously, for 5 days/month for 3, 6 and 12 months. Laboratory tests, including blood, biochemical tests were performed, in addition to clinical examination.

Results: Clinical examination revealed an increase of muscle strength in the upper and lower limbs between base line and day 6 and 12 months. We found no serious adverse events. Leukocyte levels remained below 38,000/µL. Low dose G-CSF was safe and well tolerated by the patient.

Conclusions: A significant increase in muscle strength in this patient may indicate beneficial effects of G-CSF factor in this disorder. These results are inspiring and warrant further studies.

Keywords: Osteogenesis imperfecta; granulocyte colony-stimulating factor; muscle strength

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