Tumori, 97: 415-416, 2011

LETTERS TO THE EDITOR

Rhabdomyolysis from erlotinib: a case report

Luca Moscetti, Fabrizio Nelli, and Enzo Maria Ruggeri

UOC Oncologia, AUSL Viterbo, Viterbo, Italy

To the Editor: We report a case of unusual toxicity represented by initial acute rhabdomyolysis during erlotinib treatment in a patient with non-small cell lung cancer. The EGFR tyrosine-kinase inhibitor erlotinib is an accepted option in the treatment of advanced non-small cell lung cancer[1] and its toxicity profile is mainly represented by non-hematological toxicity, especially cutaneous and gastrointestinal. Most of the adverse events are of mild intensity and generally are well manageable and reversible. Other common adverse events include transient elevation of transaminases and serum bilirubin. The incidence of grade 3-5 toxicities for erlotinib is reported to range from 1% to 19% and fatigue was reported in 19% of patients in a trial by Shepherd et al. and represents the prevalent toxicity[2]. EGFR mutant patients may be treated in first-line treatment with EGFR tyrosine-kinase inhibitors and the analysis of unusual toxicities related to such treatment deserves more attention.

A 70-year-old female patient was diagnosed in 2008 with a stage IV lung adenocarcinoma and treated with first-line chemotherapy (carboplatin and gemcitabine for 6 cycles from October 2008 to January 2009). At disease progression in October 2009, the patient started second-line treatment with erlotinib, 150 mg/day. At the start of this therapy no comorbidities were present and no concomitant medications were given. The Karnofsky performance status was 100. Kidney, liver and bone marrow function were normal. No major toxicity was observed during the first 2 months of treatment. At the end of the third month the patient suddenly developed severe weakness, asthenia and myalgia. Blood chemistry showed the following values: myoglobin 581 µg/L (normal value <90 µg/L), serum creatine kinase (CK) 274 mU/mL (normal value <170 mU/mL) and serum creatinine 2.76 mg/dL (normal value <1.2 mg/dL). Erlotinib was immediately withdrawn and after adequate hydration and intravenous bicarbonate infusion all values returned to the normal ranges. The patient was discharged after 6 days with recovery of all serological values and reduction of myalgia.

Rhabdomyolysis is the rapid lysis of skeletal muscle tissue and has been frequently described in association with the use of lipid-lowering agents, alcohol and drugs, but it is an uncommon complication of antineoplastic treatment. Cases of rhabdomyolysis have been described in patients treated with bortezomib, imatinib, interferon-alpha, interleukin-2 and other chemotherapeutic drugs[3-5].

During rhabdomyolysis an increase in serum CK activity greater than 5 times the normal value is an accepted criterion for diagnosis[6]. In this case we did not observe such an increase but only a rapid rise in CK levels in a few hours, probably because the phenomenon was at the very beginning. The prompt aggressive hydration probably avoided any worsening of symptoms and further elevation of CK and myoglobin levels.

Up to now, only one case of rhabdomyolysis related to the administration of erlotinib but in combination with simvastatin has been described in the literature[7]. To our knowledge this is the first reported case of rhabdomyolysis following treatment with erlotinib alone. Our suggestion is to monitor the levels of CK and myoglobin in patients who develop symptoms, such as myalgia, during treatment with tyrosine-kinase inhibitors.

Correspondence to: Luca Moscetti, UOC Oncologia, Ospedale Belcolle, AUSL Viterbo, Strada Sammartinese snc, 01100 Viterbo, Italy.
Tel +39-0761-339040;
fax +39-0761-339039;
e-mail l.moscetti@asl.vt.it

Received July 26, 2010;
accepted December 6, 2010.

References

1. D'Addario G, Felip E: Non-small-cell lung cancer: ESMO Clinical Recommendations for diagnosis, treatment and follow-up. Ann Oncol, 20 (Suppl 4): 68-70, 2009.
2. Shepherd FA, Rodrigues Pereira J, Ciuleanu T, Tan EH, Hirsh V, Thongprasert S, Campos D, Maoleekoonpiroj S, Smylie M, Martins R, van Kooten M, Dediu M, Findlay B, Tu D, Johnston D,

Bezjak A, Clark G, Santabárbara P, Seymour L; National Cancer Institute of Canada Clinical Trials Group: Erlotinib in previously treated non–small-cell lung cancer. N Engl J Med, 353: 123-132, 2005.
3. Penel N, Blay JY, Adenis A: Imatinib as a possible cause of severe rhabdomyolysis. N Engl J Med, 358: 2746-2747, 2008.
4. Cibeira MT, Mercadal S, Arenillas L, Muntanola A, Salamero O, Blade J: Bortezomib-induced rhabdomyolysis in multiple myeloma. Acta Haematol, 116: 203-206, 2006.
5. Anderlini P, Buzaid AC, Legha SS: Acute rhabdomyolysis after concurrent administration of interleukin-2, interferon-alfa, and chemotherapy for metastatic melanoma. Cancer, 76: 678-679, 1995.
6. Khan FY: Rhabdomyolysis: a review of the literature. Neth J Med, 67: 272-283, 2009.
7. Veeraputhiran M, Sundermeyer M: Rhabdomyolysis resulting from pharmacologic interaction between erlotinib and simvastatin. Clin Lung Cancer, 9: 232-234, 2008.