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Drug interaction between simvastatin and sodium fusidate leading to Fatal Rhabdomyolysis in a patient with diabetic foot osteomyelitis.

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NICE guidelines suggest the use of statins in patients with Type 2 diabetes as statins are one of the most effective medications in managing elevated cholesterol and thus reducing cardiovascular risk in these patients. Statins are well tolerated but rhabdomyolysis is a rare (0.000044 event per person per year) side effect with 58% of cases associated with drug interactions. 30% of diabetic foot ulcers (DFU) are complicated by osteomyelitis requiring antibiotics. Antibiotics such as sodium fusidate and erythromycin inhibit enzyme potentiating drugs like statins.
An 81- year old diabetic male on flucloxacillin and sodium fusidate for DFU with osteomyelitis was commenced on 40mg simvastatin. He presented 4 weeks later feeling unwell and unable to walk. Simvastatin was stopped. Creatine kinase (CK) measured at presentation was 1947 (Reference range 38 –174 iu/L). When seen in the clinic 3 days later CK was 28754, which peaked at 41480 the next day with the onset of acute renal failure. Despite active treatment the patient died 8 days later. This case highlights the possible interaction between sodium fusidate and simvastatin resulting in fatal rhabdomyolysis. Simvastatin is metabolised by the cytochrome P450 3A4 enzyme. When given concomitantly with an inhibitor of this enzyme, such as sodium fusidate, simvastatin concentration increases. Genetic variation in enzyme expression is also a key predictor of drug toxicity. Drug interaction and possible genetic polymorphism may have led to accumulation of simvastatin and fatal rhabdomyolysis in this case. The extensive use of statins in patients with diabetes makes it important for doctors to be aware of its interaction with other commonly co-prescribed drugs and closer monitoring could allow earlier recognition and treatment.