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Rosuvastatin safety: An experimental study of myotoxic effects and mitochondrial alterations in rats

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Abstract:

Myopathy is the most commonly reported adverse effect of statins. All statins are associated with myopathy, though with different rates. Rosuvastatin is a potent statin reported to induce myopathy comparable to earlier statins. However, in clinical practice most patients could tolerate rosuvastatin over other statins. This study aimed to evaluate the myopathic pattern of rosuvastatin in rats using biochemical, functional and histopathological examinations. The possible deleterious effects of rosuvastatin on muscle mitochondria were also examined. The obtained results were compared to myopathy induced by atorvastatin in equimolar dose. Results showed that rosuvastatin induced a rise in CK, a slight increase in myoglobin level together with mild muscle necrosis. Motor activity, assessed by rotarod, showed that rosuvastatin decreased rats' performance. All these manifestations were obviously mild compared to the prominent effects of atorvastatin. Parallel results were obtained in mitochondrial dysfunction parameters. Rosuvastatin only induced a slight increase in LDH and a minor decrease in ATP (~14%) and pAkt (~12%). On the other hand, atorvastatin induced an increase in LDH, lactate/pyruvate ratio and a pronounced decline in ATP (~80%) and pAkt (~65%). These findings showed that rosuvastatin was associated with mild myotoxic effects in rats, especially when compared to atorvastatin. © 2016 Elsevier Ireland Ltd

Reference: