Case Report
QTc prolongation with concurrent use of azithromycin and diltiazem in an old female patient: a case report
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INTRODUCTION
Macrolide antibiotics are used to treat upper respiratory tract infections, community acquired pneumonia and other infections. Prolonged cardiac muscle repolarization leading to ventricular arrhythmias, notably torsade de pointes and sudden death are well described as adverse reactions and are common to all macrolides.1,2
Until recently, azithromycin has been considered the safest of the macrolides in terms of overall toxicity, as it neither undergoes CYP3A4 metabolism nor inhibits CYP3A4 to any clinically meaningful degree, and therefore does not interfere with commonly prescribed medications that undergo CYP3A4 metabolism. Azithromycin was also thought to have lower pro-arrhythmic potential than other macrolides, in vitro.3,4 Despite these properties, corrected QT interval (QTc) prolongation and torsade de pointes were reported with azithromycin use.4-6 A recent study concluded that azithromycin therapy increased the risk of cardiovascular death.7 Azithromycin cardio-toxicity was believed to be more pronounced among patients with a high baseline risk for cardiovascular disease1,7,8 and at higher serum levels.9

ABSTRACT
Azithromycin is widely prescribed for the treatment of respiratory tract infections. Incidence of corrected QT interval (QTc) prolongation and cardiac arrest has not been reported after concomitant administration of azithromycin and diltiazem. Here we present a 69-year-old female patient who developed profound QTc prolongation and cardiac arrest after three days of concomitant administration of azithromycin and diltiazem. The patient was successfully resuscitated, intravenous magnesium was given and azithromycin therapy was discontinued. The QTc interval dropped to 412 ms 24 hours after azithromycin discontinuation. One week later, the patient was discharged home after full recovery. This case illustrates a possible drug interaction between azithromycin and P-glycoprotein inhibitor drugs and/or drugs having an effect on cardiac repolarization.
To the best of our knowledge, there are no reported cases of QTc prolongation and torsade de pointes induced by the concurrent use of azithromycin and diltiazem. We describe the first documented case of QTc prolongation and torsade de pointes possibly linked to an interaction between these two drugs.

Keywords: Azithromycin, Diltiazem, Drug Interaction, QTc prolongation, Torsade de pointes, Cardiac arrest