Poster

[P27-5] P27-5: Cardiovascular drugs (2)

Chair: David A. Joyce, Australia

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[P27-5-3] Decrease of digoxin level due to concurrent use of rifampicin: case report

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Background

Digoxin is a positive inotropic drug approved for various heart conditions, such as cardiac valve disease, atrial fibrillation, atrial flutter and chronic congestive heart failure. According to previous studies, mortality rate was reduced when digoxin concentration was maintained at 0.5 - 1.5 ng/mL and incidence of toxic event increased when the drug level is above 1.5 ng/mL. Also, some medications may cause drug-drug interaction and alter the digoxin concentration. Here we report a case of decreased digoxin concentration due to concurrent use of rifampicin in clinical practice.

Method (Medication &Therapeutic drug monitoring history):

A 73-year-old woman had been taking digoxin 0.25 mg tablet once daily for mitral valve regurgitation. Fever and dyspnea started on Day 1 and the physician added rifampicin 300 mg capsule three times a day to manage suspected infective endocarditis until Day 36. Serum trough concentrations of digoxin were measured on Day 4, 7, 11, 21 and we performed dose adjustment as needed considering a target range 0.5 –1.5 ng/mL.

Results

Serum digoxin concentration on Day 4 was within therapeutic range (0.76 ng/mL), so the same dose (0.25 mg digoxin once daily) was recommended to be continued. Three days later (Day 7), digoxin level of 0.61 ng/mL was measured and the level was decreased to 0.55 ng/mL on day 11, and 0.42 ng/mL on day 21. We maintained the same dosage from Day 1 to Day 21 and further continued, because the serum digoxin concentration was in target range considering patient’s general condition. During this period, the patient’s renal function represented by serum creatinine levels barely changed (0.68 to 0.66 mg/dL). Although there was no difference in dosage, serum digoxin level significantly decreased with concurrent use of rifampicin.

Conclusions

In this case, concurrent use of rifampicin caused decrease of serum digoxin concentration, which was consistent with previous knowledge. Therapeutic drug monitoring might be a useful tool to prevent therapeutic failure caused by drug-drug interactions.