CLINICAL CASE: DRUG INTERACTION BETWEEN CYCLOSPORINE AND PHENYTOIN

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Introduction and objective: The drug interaction must be taken in consideration when it will have unexpected answers to the medication. The pharmaceutical team of INCOR was questioned about the blood concentration of the immunosuppressant cyclosporine (calcineurin inhibitor), in a patient of 17 years old, male, 110lbs, submitted to a heart transplant, in January of 2009, that although the gradual increase of the dose, didn’t reach the desired blood concentration (above of 300ng/mL). We search to identify possible causes of this drug not to reach the desired blood concentration.

Materials and methods: All the medical prescription since 1º postoperative (PO) had been evaluated, verifying the prescribed doses and existing drug interactions with the UpToDate/Lexi-Comp. In 1º PO, the immunosuppression was initiated with mycophenolate and corticoids, remained until 4º PO, when was prescribed rabies immune globulin, because of the dysfunction of the graft. In 5º PO was initiated cyclosporine and suspended the immune globulin. The cyclosporine was increased gradual until 10º PO, arriving the dose of 250mg/day. In 14º PO, was carried through a biopsy that evidenced an important rejection and with this, the cyclosporine was increased for 300mg/day. The blood concentration of the cyclosporine had been: 11º PO of 48ng/mL, 13º PO of 303, 15º PO of 76ng/mL, 17º and 18º PO of 79ng/mL.

Results and conclusion: We identify that in 15º PO, the patient had convulsions, who was treated with phenytoin, a powerful inductor of isoenzymas CYP, including the CYP3A4, of which cyclosporine is a substratum. We suggested the exchange of the cyclosporine for tacrolimo, another calcineurin inhibitor and substratum of the same isoenzymes; however, its metabolization is less affected. The level of tacrolimo was increasing gradual, until arriving at the desired therapeutical level (between 8 and
15ng/mL). This intervention demonstrates the importance of the participation of the pharmacist as a health team member, promoting the rational and safe use of drugs.