**Poster Session**

**P3-082**  
**THERAPEUTIC DRUG MONITORING OF DOCETAXEL FOR A LIVING DONOR LIVER TRANSPLANTATION RECIPIENT**

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**Golas:** Therapeutic drug monitoring (TDM) provides valuable guidance for the dose adjustment of several classes of drugs especially when the pharmacokinetics (PK) and pharmacodynamics (PD) are not predictable. Recently, we have had an opportunity to administer a docetaxel (DOC) for a breast cancer patient who is a living donor liver transplantation (LDLT) recipient with severe renal dysfunction using TDM strategy.

**Methods:** The 63-year-old woman presented to us in September 2008 with cT2N1M0 invasive ductal carcinoma of the breast, triple negative phenotype. She received LDLT at age 58 due to hepatitis B. The donor was her husband. She has been taking tacrolimus, cilnidipine and lamivudine after transplantation. She suffered renal dysfunction (serum creatinine 2.0 mg/dl, creatinine clearance 30 mL/min) attributed to the tacrolimus and her recent serum liver enzymes were within upper normal limits. We planned that administer 40 mg/m² of DOC in the first cycle and adjust dosage through the use of TDM since the second cycle. Blood samples were obtained prior to DOC infusion, immediately before the end of infusion and 10, 30, 60, 120 and 180 min after the end of infusion. PK parameters were calculated with the software WinNonlin using the two-compartment model.

**Results:** The area under the blood concentration-time curve (AUC) and clearance (CL) of DOC in the first cycle were 0.91 mg*h/L and 61.8 L/h, respectively. Compared to the PK data from our clinical trial reported recently, CL in the current patient was about 1.8 times higher, and with a target AUC of around 3 mg*h/L in accordance with a phase 3 study, dose escalation of DOC up to the maximum tolerated dose of 100 mg/m² seemed feasible through the use of TDM. We started the second cycle on day 15 of first cycle at an increased dose of 75 mg/m². Non-hematologic toxicity was not observed and the nadir neutrophil count on day 8 was 600 cells/mm³. After increasing the third cycle dose to 100 mg/m², the nadir neutrophil count on day 8 of the third cycle was 300 cells/mm³ and only grade 1 non-hematological toxicities were observed.

**Conclusion:** Little is known about the PK of antineoplastics, including DOC, in LDLT recipients. Given our experience here, TDM for antineoplastics indeed provides valuable guidance for dose adjustment in such patients when the PK and PD are not predictable.