Pincinato E C et al., Clin Pharmacol Biopharm 2015, 4:4
http://dx.doi.org/10.4172/2167-065X.C1.017

OMICS International
conferenceseries.com

3rd International Conference on
Clinical Pharmacy
December 07-09, 2015 Atlanta, USA

Glutathione-S-transferase (GST) polymorphisms influence cisplatin elimination and toxicity to treatment in patients with scamous cell carcinoma of head and neck

Pincinato E C[1, 2], **Costa A P L**[1], **Lopes-Aguiar L**[1], **Costa E F D**[1], **Nogueira G A S**[1], **Lima T R P**[1], **Moriel P**[1] and **Lima C S P**[1]
[1]University of Campinas, Brazil
[2]Mackenzie Presbyterian University, Brazil

Cisplatin (CDDP) plus Radiotherapy (RT) is commonly used for treatment of Scamous Cell Carcinoma of Head and Neck (SCCHN). However, patients with the same clinical and tumor aspects present different toxicities to treatment. Glutathione-S-transferases participate in CDDP excretion from the cells and may contribute to distinct toxicities to CDDP plus RT. GSTM1 and GSTT1 genes have null variant genotypes, in which enzymes are absent. *Val* allele of *GSTP1 Ile105Val* polymorphism encodes enzyme with lower activity than that encoded by Ile allele. The aims of this work were to evaluate the influence of GSTs polymorphisms on toxicity induced by CDDP and its elimination in urine of patients with SCCHN. Ninety SCCHN patients received 35 sessions of RT plus three infusions of CDDP (75-100 mg/m^2). DNA was obtained from blood samples and urine was obtained 0-48 hours after CDDP administration. Vomiting, ototoxicity and nephrotoxicity were evaluated using conventional criteria, urinary CDDP was detected by HPLC-UV, and GSTs genotypes were identified using multiplex PCR or PCR and enzymatic digestion. Patients with GSTT1 null genotype presented less vomiting (20.0% vs. 64.4%; p=0.002), ototoxicity (41.7% vs. 79.3%; p=0.03), and nephrotoxicity (62.87±20.72 vs. 69.94±21.40 EDTA-^{51}Cr mL/min/1.73 m^2; p=0.03) than those with GSTT1 genes. Patients with *GSTP1 IleIle* genotype eliminated less CDDP in urine than those with Ile/*Val* or *Val*/Val (196.24±118.43 vs. 277.74±100.24 ug; p=0.03) genotypes. Our data indicate that SCCHN patients with inherited distinct abilities for CDDP metabolism, associated with GSTTT1 and *GSTP1 Ile105Val* polymorphisms, exhibit distinct toxicities to treatment and urinary CDDP excretion.

Biography

Pincinato E C has completed his Doctorate degree from University of Campinas, Brazil. He is Pharmacist, Assistant Professor of Hematology and Clinical Laboratory Coordinator at Mackenzie Presbyterian University.

eder.pincinato@gmail.com

Notes: