cyclophosphamide pharmacogenomics

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Genet Mol Res 9: Original Article First Online: Breast Cancer Res It is metabolized by cytochrome P oxidases CYPs to its active metabolite which played a critical role in therapy. Check if you have access through your login credentials or your institution. Clin Pharmacol Ther Derived from the comprehensive two-volume set, Genomic and Personalized Medicine also edited by Drs. Abstract Purpose A high degree of interindividual variation in cyclophosphamide CPA pharmacokinetics was reported in certain cancer patient groups. Bains O, Karkling M, Grigliatti T, Reid R, Riggs K Two nonsynonymous single nucleotide polymorphisms of human carbonyl reductase 1 demonstrate reduced in vitro metabolism of daunorubicin and doxorubicin. Clin Cancer Res Find all citations in this journal default. Most adjuvant breast cancer treatment regimens include the combination of an anthracycline epirubicin or doxorubicin and the alkylating agent cyclophosphamide.Aug 23, - The Pharmacogenomics Journal 5, (); doi/rubeninorchids.com; Download Citation. Received: 01 March ; Revised: 27 Cytochrome P pharmacogenetics as a predictor of toxicity and clinical response to pulse cyclophosphamide in lupus nephritis. Arthritis Rheum ; ?Abstract ?INTRODUCTION ?RESULTS ?MATERIALS AND METHODS. Variation in cyclophosphamide pharmacokinetics and metabolism has been highlighted as a factor that may impact on clinical outcome in various tumour types. The current study in children with B-cell non-Hodgkin's lymphoma (NHL) was designed to corroborate previous findings in a large prospective study incorporating ?Introduction ?Patients and methods ?Results ?Discussion. Cyclophosphamide (CPA) is one of the most widely used anti-tumor agents for a variety of malignancies. However, a high degree of inter-patient variation in CPA pharmacokinetics has been reported in adults (Batey et al., ; Moore et al.,) and in children (Yule et al.,), both in conventional and in high CPA. Pharmacogenetics. Pharmacokinetics. Cyclophosphamide requires activation via a process that involves [CYP2B6], CYP2C9, CYP2C19, CYP2C8, CYP3A4, CYP3A5 or CYP2A6 [Article]. Detoxification is carried out by ALDH1A1- and ALDH3A1-mediated oxidation or conjugation by GSTA1, GSTM1, GSTP1 and. LiteratureAssociation of CTH variant with sinusoidal obstruction syndrome in children receiving intravenous busulfan and cyclophosphamide before hematopoietic stem cell transplantation. The pharmacogenomics journal. Huezo-Diaz Curtis P, Uppugunduri C R S, Muthukumaran J, Rezgui M A, Peters C, Bader P. Genetic factors are thought to play a role in the interindividual variation in both response and toxicities associated with cyclophosphamide-based therapies. This drug focus reviews the most compelling studies conducted on the pharmacogenetics of cyclophosphamide-based therapies. Broader pharmacogenomic studies. Cyclophosphamide is an alkylating agent that is used primarily for the treatment of lymphomas and breast cancer. As with tamoxifen, cyclophosphamide is a prodrug that requires metabolism by CYPs to produce the active form of the drug.1 Multiple CYP forms are able to activate cyclophosphamide including CYP 2B6, 2C9. Timothy A. Graubert, and Howard L. McLeod. A mouse- based strategy for cyclophosphamide pharmacogenomic dis- covery. J Appl Physiol , ; /jappl-physiolGenome-wide mapping approaches are needed to more fully understand the genetic basis of chemo- therapy response. Nov 11, - The role of CYP pharmacogenetics in the bioactivation of cyclophosphamide is still controversial. Recent clinical studies have suggested a role for either CYP2C19 or CYP2B6. The aim of this study was to clarify the role of these pharmacogenes. Determine the pharmacogenomics of adjuvant chemotherapy comprising doxorubicin and cyclophosphamide and/or paclitaxel in women with nonmetastatic invasive breast cancer. Determine treatment-induced myelosuppression (e.g., neutropenia) in patients treated with adjuvant doxorubicin and cyclophosphamide who.