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Effect of Genetic Variation on Nausea and Vomiting Treatments Action

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Nausea and Vomiting Back Ground

Both nausea and vomiting are recognized as two separate and distinct conditions. Nausea is an unpleasant sensation of being vomit or urge to vomit which may or may not result in vomiting. While, vomiting or emesis is the process of expelling of undigested foods through the mouth. Nausea and vomiting can arises from a different or wide spectrum of etiologies which are either directly associated to cancer disease itself or its treatment. According to the new ranking of chemotherapy side effects, nausea is the number one or the most disturbing side effect while vomiting is the third and sometimes the fifth disturbing chemotherapy side effects [1-6].

Genetic Variation Effect on Nausea and Vomiting Treatments

Inter individual diversity in drug metabolism is caused by many factors including environmental factors, cultural factors related with type of diet, concomitant drug therapy as well as genetic factors i.e., ethnic variation. All of these variations play an important role in changing pharmacokinetic and pharmacodynamic properties, volume of distribution, elimination, disposition and clinical effect for many drugs [7,8]. Much of this distinction has shown to be caused by genetic polymorphisms of the human cytochrome P450 enzymes (CYP) [8]. CYP is the most vital enzymatic system concerned with drug metabolism. Approximately 65% of common drugs used are metabolized by cytochrome P450 enzymes and half of them are mediated by the CYP3A subfamily [8]. Depending on this genetic polymorphism will leads to change in the metabolism of antiemetic treatment, this will leads to critical problem mainly within cancer patients since within those patients nausea and vomiting can be clinically significant and severely incapacitating side effects of cytotoxic chemotherapy [9]. These symptoms can symbolize a major therapeutic challenge and if unsatisfactorily controlled by antiemetic treatment, will limit a patient's ability or desire to eat and drink, considerably reduce quality of life, threaten the success of therapy, and result in increased mortality, morbidity, and prominently health care costs [9].

Conclusion

Therefore it is an obligate matter for each population to develop their own antiemetic treatment guideline depending on the variation in their genes, by this way they can get the maximum benefit of antiemetic treatments and reduce nausea and vomiting negative effect on cancer patients lives. According to that each clinical and medical staff must focus on this point in their future studies.

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