Variation in response to opioid analgesics: A study on single nucleotide polymorphisms in human COMT and cytochrome P450 D6 genes

Opioids are potent analgesics and remain to be the mainstay in the management of cancer-related pain. The variation in response to opioid analgesics is partly due to genetic variability. A hospital-based cross-sectional study was conducted to investigate the association between Catechol-0-Methyl Transferase (COMT) and cytochrome P450 D6 (CYP2D6*10) genetic polymorphisms and opioid consumption among cancer patients. Polymorphisms in the COMT rs4680 and CYP2D6*10 rs106585 genes were identified through restriction fragment length polymorphism and nucleotide sequencing. Cancer patients with moderate pain (NRS 4-6) were prescribed with tramadol, while those having severe pain (NRS 7-9) were given morphine. None of the single nucleotide polymorphisms in the two candidate genes COMT and CYP2D6*10 showed significant associations with opioid consumption among cancer pain patients. It is likely that multiple genes rather than single gene may affect drug pharmacokinetics and pharmacodynamics and together with environmental factors may influence the clinical efficacy of opioid analgesics.

Biography

Michael O Baclig is a Scientist of Research and Biotechnology of St. Luke’s Medical Centre, Philippines. He is also an Associate Professor of the MS Molecular Medicine Program of St. Luke’s College of Medicine. He has received his MS in Microbiology and PhD in Biological Science from the University of Santo Tomas, Manila. He has received several awards including the outstanding dissertation in advanced science and technology by the Philippine Council for Industry, Energy and Emerging Technology, Research and Development-Department of Science and Technology (PCIEERD-DOST), Crisanto Almario Memorial Award and Benavides Award.

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