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Pharmacogenetic responses to intrathecal morphine

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Intrathecal morphine (ITM) has fast become a popular and effective post-operative analgesic for many different surgical procedures. Expected side effects of morphine include analgesia, sedation, respiratory depression, nausea, and constipation. Pruritus is the most commonly documented adverse effect of intrathecal morphine and can be extremely troublesome and unpleasant than the pain itself. Individual patients differ in their responses to specific opioid analgesics in terms of accepted tolerability and effectiveness as an analgesic agent. Several studies show that inter-subject variability in the pharmacokinetic handling of opioids, mainly in the metabolism phase, may be one factor contributing to this variability. The rate and pathways of opioid metabolism may be influenced by genetic factors and race. This paper reports on an audit undertaken in 2011 in one metropolitan hospital in New Zealand to determine the incidence of pruritus in a population receiving intrathecal morphine. Numerous data were compared to determine the incidence of intrathecal morphine induced pruritus amongst different ethnic groups, gender, age, dosage, and types of surgery. The results clearly show that New Zealand Māori exhibited intrathecal morphine induced pruritus with a much higher incidence than New Zealand Europeans ($P=0.004$) at a similar dose. This leads to question the existence of a pharmacogenetic response specific to particular ethnic group in its response to morphine.

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