

キャピラリガスクロマトグラフィを用いた同位体希積分析による患者尿中フェンタニルおよび主代謝物ノルフェンタニルの定量

世良庄司、五郎丸毅、鮫島照子*、川崎孝一*、小田利通*

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Isotope Dilution Analysis for Urinary Fentanyl and its Main Metabolite, Norfentanyl, in Patients by Isotopic Fractionation using Capillary Gas Chromatography

Shoji Sera, Tsuyoshi Goromaru, Teruko Sameshima*,
Koichi Kawasaki* and Toshiyuki Oda*

ABSTRACT Isotope dilution analysis was applied to determine urinary excretion of fentanyl (FT) and its main metabolite, norfentanyl (Nor-FT), by isotopic fractionation using a capillary gas chromatograph equipped with a surface ionization detector (SID). Urinary FT was determined quantitatively in the range of 0.4-40 ng/ml using deuterium labeled FT (FT- $^2\text{H}_{19}$), as an internal standard. Nor-FT concentration was quantitatively determined in the range of 10-400 ng/ml using deuterium labeled Nor-FT (Nor-FT- $^2\text{H}_{10}$). No endogenous compounds or concomitant drugs interfered with the detection of FT and Nor-FT in the urine of patients. The present method will be useful for pharmacokinetic studies and the evaluation of drug interactions in FT metabolism.

抄録 フェンタニル(FT)とその主代謝物Nor-FTの尿中濃度を重水素標識体(FT- $^2\text{H}_{19}$ およびNor-FT- $^2\text{H}_{10}$)を用いた同位体希積分析により測定した。表面電離型イオン化検出器装備キャピラリGCによりFTは0.4-40ng/ml、Nor-FTはN-メチル誘導体化後10-400ng/mlの範囲で再現性よく測定できた。

* Kagoshima University Faculty of Medicine
鹿児島大学医学部