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Citalopram in newborns. A case report

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AIMS: The aim of this presentation is to draw attention to the risk of citalopram for newborns, when administered to the mother during pregnancy. We met 5 such cases in the period 2001-2005. All babies showed symptoms of severe abstinence syndrome. Meconium and/or urine were sent to the laboratory for drug of abuse screening. In all cases but one the screening was negative and only by consulting the doctor in charge we learnt that the mother was given citalopram for psychiatric reasons. Analysis focused on citalopram was then performed in the remaining specimens.

METHODS: Meconium was homogenized, sonicated, centrifuged and supernatant used for immunochemical screening by EMIT. Isolation by SPE on Chem Elut columns followed. 2 dimensional HPTLC was used for identification. The procedure for the analysis of meconium is described in detail elsewhere [1,2]. Isolation from urine was done by liquid-liquid extraction and TLC was used for identification. HPLC was used for quantification in blood. The isolation from blood with added internal standard was done by liquid- liquid extraction, followed by reextraction with 0.1 mol/l hydrochloric acid. HPLC was performed on Waters chromatographic system with photodiodearray detector, in isocratic mode on reversed-phase column octadecylsilica Separon SGX C18, mobile phase acetonitrile –buffer (pH 3, with nonylamine)1:3 v/v. The procedure is described elsewhere [3].

CASE REPORT: Case 1 is presented as a typical one in detail: The neonate displayed symptoms of the abstinence syndrome (depression, restlesness, increased irritability, shivering, increased muscle tonus) 30 hours after delivery. Meconium and urine were sent for analysis of drugs of abuse. Screening in both specimens was negative. Subsequently the analysis on citalopram was requested as it was found out that the mother had been taking citalopram during the whole pregnancy. Citalopram was detected in urine, while meconium was negative.When the health status of the baby was not improving, blood samples from him and his mother taken on the 4th day after the birth were sent for quantification of citalopram. The concentration in the serum of the child was 5 ng/ml, in the serum of the mother 22 ng/ml, i.e. levels within the therapeutic range. Citalopram was detected also in urine taken on the same day. This child had suffered from neurological problems in his toddler age, considered as a consequence of citalopram intoxication. Two years later the mother, still treated with citalopram, gave birth to the second child. The baby had the same symptoms as his older sibling, only expressed in the milder form. This time only urine collected for 12 hours after delivery was available. Citalopram and metabolite were detected in urine. HPLC not validated for urine was used for semiquantitative estimation of citalopram amount in urine. 2184 ng/ml citalopram were found.

In 2 other cases, symptoms of abstinence syndrome developed within 12 – 18 hours after delivery. In one case, where the mother treated with citalopram smoked marihuana several times per month, the child showed only increased irritability. In all cases citalopram was detected only in urine, but not in meconium. The question, whether citalopram is eliminated only in newborn`s urine, or whether negative results in meconium are caused by the isolation procedure, remains to be solved. The amount of meconium remaining after drug screening was always too small to make the thorough isolation study possible.

CONCLUSIONS: The health condition of the baby in the demonstrated case was serious, even though the blood levels were within "therapeutical" range. Typical clinical symptoms usually arise suspicion on drug abuse. Only good cooperation between the neonatologist and the laboratory can avoid misinterpretation and reveal the real cause of the health problems. Therefore, more information about similar cases (also concerning other novel psychopharmacologic agents) are needed.

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