Opiate-addiction of the parents as a potential high risk factor for child maltreatment

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1. Introduction

Child neglect and maltreatment is a major concern in the youth welfare system. To improve prevention our unit was assigned to do toxicological hair analyses in children living or having contact with their opiate addicted parents. Of the addicted parents all except two were on opiate maintenance treatment.

2. Methods

19 hair samples were collected between July 2010 and February 2011. Information on family structures, medication, substitute and handling, substance abuse and availability of psychotropic drugs in the surrounding of the children was collected. Parents gave informed consent after they were briefed that the results of the examination might lead to uncomfortable consequences. Multisectional analysis was performed when possible. Analysis started with two segments of 3 cm length, altogether covering a period of six months. In case of a positive result additional segments were analysed. After decontamination the samples were tested for morphine, 6-MAM, codeine, methadone, EDDP, buprenorphine, cocaine, benzoylecgonine, THC, and commonly used benzodiazepines. The analysis was performed according to laboratory standard procedures (GC/MS und LC/MS/MS). The results were interpreted according to the consensus of the Society of Hair Testing (SOHT)[1]. 7 hair samples were sent to other laboratories.

3. Results

Four caregivers admitted use of psychotropic substances except cannabis in addition to regular prescribed methadone. All caregivers denied using drugs in the presence of their children and claimed handling prescription methadone according to safety advices. 19 children between 8 months and 11 years were included in this report. Only two children were tested negative. In three children contact with heroin was diagnosed. Two children tested positive for benzodiazepins In 14 children more than one psychotropic substance was detected. Drug concentrations were low compared to addicted persons. The concentration was not homogen over the segments and lower in the proximal segments.

4. Conclusion

Regular maintenance treatment of the addicted parents is considered to stabilize family life. The present results are not in general contrast with this hypothesis but reveal the serious problem that these children are raised in households where addictive, illicit drugs are used and are unwilling victims to exposure to these products. The results also suggest that children living with drug addicted parents are at risk of dangerous drug exposure. Since serious and fatal methadone and buprenorphine poisonings in children living with persons on maintenance treatment of drug addiction are well documented over many years [2-11], the “take-home dispension” has to be questioned when children are present.

Tab. 1. Drug analysis in hair from children.

Type of drug exposition diagnosed	Affected children
Contact with heroin	5
Systemic exposure to heroin, metabolic heroin profile suggestive for parental incorporation	10
Contact with cocaine	1
Passive systemic exposure to cocaine (e.g. hand-mouth-contact) due to environmental pollution	4
Methadone alone or methadone /EDDP suggestive for systemic exposure	13
Buprenorphine / norbuprenorphine suggestive for systemic exposure	1
Diazepam suggestive for systemic exposure	2
Flunitrazepam suggestive for systemic exposure	1

There is limited data on drug exposure of children confirmed by hair testing[12-16]. Kintz et al reported 6 children with serious or fatal methadone poisoning in which a hair analysis was performed. Besides other options it was discussed if the result of the hair test was due to the individuals own sweat or other own body fluids[8].

Although it is generally agreed that qualitative results from hair analysis are reliable, the interpretation is still on debate, due to possible external contamination. Investigations on techniques to improve methods to distinguish positive hair results after external contamination from those after systemic exposure are needed.

5. References

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