Heavy metals: Cd, Pb, and Hg in the hair of autistic children

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ABSTRACT: Even though autism has been known since a long time ago, the prevalence of autism has become more and more intense; also in Indonesia. It has been a major and social concern around the world. One of the concerns is the contamination of mercury in the children, especially through the vaccination which contains mercury as the preservative. Based on the pros and cons of these issues, a preliminary study has been conducted to analyze the heavy metals contents in the hair of autistic children. It was found out that the concentration of Cd, Hg and Pb in 14 subjects of autistic children were varied from undetectable up to 0.71; 0.30 – 5.75 and 3.1 – 25.3 μg/g of hair respectively. While the hair of non-autistic children and adults showed that the content of mercury in some of the autistic’s hair was less than those in the non-autistics; on the other hand, the Pb content mostly was higher in the autistic children’s hair. These findings could also propose that the heavy metals pollution is of growing concern to even the young children. This study is conducted to give some insights on the effect of heavy metals contamination in young children, and when necessary will be used as the basic of other continuing studies.

1 INTRODUCTION

Even though autism has been known since a long time ago, recently the prevalence of autism has become more and more intense. In Indonesia there are a lot of special schools for autistic children have been established, in big cities like Jakarta and Surabaya, and also in smaller towns. It has been a major and social concern around the world. Some of autistic parents develop a kind of sharing club and mailing list in order to share their experience in taking care of their children and also the knowledge of autism.

One of their concerns is the contamination of mercury in the children, especially through the vaccination which contains mercury as the preservative. Some parents complained that after being vaccinated their young children become apathetic, and had shown a sign of autism, and they blamed the heavy metals contamination as the source of the children sufferings, especially mercury. This issue even caused some parents are very reluctant to bring their children for vaccination, especially if they are not sure that the vaccine is mercury free.

Environmental exposure to heavy metals, such as lead and mercury, causes neurotoxicity and leads to developmental disorders. It has been proposed that the recent dramatic rise in the incidence of autism is linked to the increased number of required vaccinations containing the ethylmercury derivative thimerosal (Deth, October 3-5, 2003). Holloway (2003) in his study proposed that children with ASD were more likely to have adverse reaction to vaccines, and those adverse reactions tended to be more severe, and this could be due to the thimerosal in the vaccines.