WHITENER POISONING: A CAUSE OF CONCERN

Ranjit Nair¹, G. Gouthami¹, B. Tejasree¹, P.Krishnakanth¹, A. Santhoshini¹, P. Swathi¹, B. Venkateswarlu¹

Department Of Pharmacy Practice & PHARM-D, MallaReddy Institute of Pharmaceutical Sciences, Maisammaguda, Dhulapally, Secunderabad, India

ABSTRACT

The whitener poisoning is being used as an addictive substance in India and it is being abused since last few years. The main victim of this is young school going children & adolescent who are highly addicted to the consumption of this poison through various method. This has led to many lifelong complication and resulting in fatal. The main focus of this article is too aware the young minds about the complication of such substance abuse and how to overcome it.

Keyword: - Whitener, Substance abuse, addict, consumption, poison.

INTRODUCTION

This is a fairly new addiction among young teenagers in India today. Sniffing shoe whitener, or eraser white ink has caught on among many kids in India today.

This substance is poured on a handkerchief or into a bag and then inhaled. Doing this for some time makes the sniffer dizzy, high and disconnected. The chemical toluene is what affects the sniffer as it has a hallucinatory effect on the sniffer. What makes white ink or WINK attractive to teenagers is how cheap white ink is and the effect it has on them. So make sure you keep an eye on the shoe-whitener or white ink you stock at home. Toluene is also found in paint thinner and nail polish remover also.

Over the last few years, there has been a rise in cases of solvent abuse among children in the 10-18 years age group in the city and sale of whiteners continues unabated. And hence we feel that it's the right time to intervene. Now the law stipulates only the regulation of the sale of harmful solvent substances and hence we are filing case, seeking a directive to ban the sale of products¹.

Brands of Whitener

Whiteners are being manufactured by various company this days because its easy preparation, easy availability of chemicals and good market value price in India. There are large number of industries which are involved in this. A few brands of whitener production includes:

Correction fluid is commonly referred to by the leading brand names. These brands include:

- Liquid paper
Generally, "Liquid Paper" and "Wite-Out" are used in the United States, Canada, Australia and Tajikistan, while "Tipp-Ex" is used in Europe. Twink is the leading brand, and colloquial term, for correction fluid in New Zealand. In the English-speaking Caribbean the term "White-paper paste" is used. In India the name "White Ink" is used by the student community².

CHEMICAL CONSTITUENTS OF WHITENER

Whitener exerts its effects through trichloroethane, a volatile solvent. Inhalants include other substances such as petrol and toluene. These substances are cheap, accessible and readily available to children and adolescents.

Because it contains organic solvents (volatile organic compounds), unused correction fluid thickens over time as volatile solvents escape into the air. It can become too thick to use, and sometimes completely solidifies. Therefore, some manufacturers also sell bottles of solvent as "thinner", a few drops of which will return the correction fluid to its original liquid state.

Thinner originally contained toluene, which was banned due to its toxicity. Later, it contained 1,1,1-trichloroethane, a skin irritant now widely banned under the Montreal Protocol on Substances That Deplete the Ozone Layer, and then the slightly safer trichloroethylene. Thinners currently used with correction fluid include bromopropane.

To avoid the inconveniences of organic solvents (safety and availability), some brands of fluid are water-based. However, those have the disadvantages of a longer drying time, and incompatibility with some inks (which will soak through them) ³.

EPIDEMOLOGY

Solvent abuse is prevalent among street children and working kids. Teenagers start using solvents to gain entry into a gang, and occasionally as experimentation. Its use in a college student is unusual. But this may be a developing pattern indicating spread of the habit into middle class homes. Most adolescents are one-time or short-term users. Those who abuse inhalants persistently usually have conduct disorders.

Most of the street children were inhaling whitener daily. 300% more harmful than alcohol. Inhaling whiteners is 300 per cent more harmful than regular alcohol. It directly affects the nervous system and hampers functioning of lungs, brain, kidneys. A whitener is sold with a diluter that is an organic solvent (hydrocarbon) like toluene, trichloroethylene, methyl benzene, which are alcoholic. The organic solvents when deeply inhaled give a sudden kick.

"When compared to other drugs, 15 to 30 ml bottles of correction ink are available at stationary stores for anywhere between `30 and `50. And hence, though its accessibility to children is very high, the regulation of its sale is a grey area as there are no legal provisions
for it,” says a counsellor. Other than sniffing and huffing, some youngsters even try to breath from a paper bag containing solvent to give themselves a high.

It has been found that whitener-inhaling addiction among the adolescent boys in Kerala is on the rise. The authorities say that it is mostly teens, youngsters in the age group of 13 and 17 years, who are the victims.

Deaths have been reported because of whitener poisoning from Coimbatore, Pune and few other parts of India.

**Methods of Inhalant Abuse**

1. **Sniffing** - direct inhalation from a container or piece of clothing sprayed with the substance.

2. **Huffing** - holding a soaked cloth over the nose or mouth to increase the concentration of vapours.

3. **Bagging** - breathing from a paper or plastic bag containing the volatile substance to further increase the concentration.

**MECHANISM OF ACTION**

Young people abuse volatile solvents by deliberately inhaling available vapours 15–20 times over 10-15 minutes. This results in concentrations of up to 10000ppm as against the industrial standard of 50-100ppm.

Inhaled organic solvents like toluene cross from the blood into the brain within minutes. In the brain cells solvents act on specific receptors (NMDA and GABA) to produce effects similar to those of alcohol. Toluene, a common solvent in thinner and paint, increases opiate receptors in the Nucleus Accumbens - a key brain area associated with the reward system and the experience of pleasure. Toluene enhances dopamine release in the Nucleus Accumbens.

**Effect on Body**

- The pungent smell of whitener can not only erase print on paper, but also memory from the human brain. The toluene and trichloroethane help to intoxicate and apparently the addicts experience a kick for five to eight hours, depending on the intensity and quantity of the inhalation.
- According to the experts, the hydrocarbons in the deadly solvents can infuse easily with the blood and can affect the central nervous system of a person. Uncharacteristic behaviours such as mood swings and insomnia are some of the reported symptoms of solvent addiction and it may results in kidney, liver and lung damage.
- At low concentration (500-4000ppm) transient euphoria and disinhibition make abusers prone to risk taking and accidents.
- At higher concentrations (6000-15000ppm) dizziness, sleepiness, slurred speech, blurred vision and headaches appear. Users appear confused, unbalanced, or begin responding to hallucinations.
- Higher doses result in seizures, coma and cardiopulmonary arrest.
- While toluene, an organic solvent, plays on the central nervous system and gives a euphoric feeling, it is also a slow poison that can cause seizures, memory loss, dilated heart condition, brain damage and even death.
- And what's more, just like drug addiction, at a point of unavailability of whiteners, the victims will move on to other intoxicant substances like mosquito repellents, thinners, nail polish removers etc. which are equally, if not more, harmful.
Death by Inhalant

- **Sudden sniffing death** is the most common cause. Even first-time experimental users are at risk of sudden sniffing death as a result of heart rhythm abnormalities especially if the user is startled or agitated.
- **Suffocation and burns** from exploding solvents
- **Accidental injury** as a result of impulsive risk taking and impaired motor skills while intoxicated.
- **Suicide** accounts for up to 40% of inhalant-related deaths
- **First-time users** are also likely to die, perhaps because they are inexperienced at this dangerous pastime.

**RECOGNITION**

**Inhalant abuse should be suspected in teenagers showing** intermittent intoxication, and signs of recent inhalant abuse including paint or oil stains on clothing or skin, spots or sores around the mouth, red eyes, runny nose, chemical odour on the breath, and a dazed appearance (Anderson, 2003).

**Mass screening in schools** could be undertaken as part of the annual health check. The mental health component for middle and high schoolers should include the CRAFFT. The CRAFFT is a validated short screening instrument for substance abuse in teenagers.

**Laboratory diagnosis is not reliable** as these volatile substances
Do not persist in the body beyond a few hours
They are undetectable in urine samples because of their volatility
Hippuric acid, a long lasting toluene metabolite is also produced by foods and raises the question of false positives. Also, it is usually not available for testing in emergency.

**Outcomes**
For most adolescents inhalant use should be regarded as a passing phase or fad. A few persistent users have antisocial personality disorder and abuse other substances. Chronic users develop damage to all organ systems - heart, lungs, brain, kidneys, and liver.

**TREATMENT**

There is no specific medication to treat intoxication or for abstinence. If you suspect a child is intoxicated with an inhalant stay calm and do not alarm him or her. Startling or frightening the child precipitates hallucinations and can also lead to ‘sudden sniffing death’ due to the effect on heart rhythm. Initiate cardio-pulmonary resuscitation (CPR) until help arrives if there is no heart beat or breathing.

When the child or adolescent recovers the incident should be discussed non-confrontationally. Remember, even a single inhalation can kill the child. Also abuse of other substances is frequent with regular whitener abusers. After talking it over commit to seeking psychiatric help. Social, environmental and recreational opportunities need to be addressed.
CONCLUSION

Curing people of the addiction is a struggle that takes months or even years. With constant counselling, anti-depressants and anti-craving drugs, some are cured. Speedy recovery lies in early detection, say experts. If the child is withdrawn, seems depressed, sleepy and is irregular to school, parents should watch out, they say. Red eyes and drop in academic performance are other signs and it would be best to seek professional help, they add.

"Youngsters in the age group of 13 to 18 years are sensitive and need specific interventions from adults. Children and youngsters in this age group want to do something novel and colourful; they have the constant need to inquire into and explore new areas as well as push boundaries. If the relationship between the parents and children are transparent, children won't indulge in any dangerous activity. To be more precise, a parent needs to know where their children are, who they are with, and what they are up to,"

Sometimes, the addiction starts at home, say counsellors, as toluene is present in several substances used in households, such as paint, shoe polish and thinners. Some children inhale paint while others do petrol fumes. Often they resort to theft to support their habit.

"Unless the government bans sale of whiteners to minors, children will continue to fall prey to this white poison”.

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