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Short Communication

A Note on Gray baby syndrome

Himabindhu Gude*

Department of Biotechnology, Osmania University College of Science, Tarnaka, Hyderabad, Telangana, India

Gray baby syndrome is a rare disease, and can develop life-threatening condition in babies in children up to the age of 2.

The cause of gray baby syndrome comes from the mothers who use antibiotic, chloramphenicol, during their pregnancy or breastfeeding.

The symptoms of this gray baby syndrome are vomiting, ashen gray color of the skin, loss of appetite, low blood pressure (Hypotension), Cyanosis (discolouration of lips and skin), hypothermia, hypotonia, irregular respiration, cardiovascular collapse, abdominal distension, and increased blood lactate.

A pathophysiologic mechanism is two and plays a role in the development of gray baby syndrome after exposure to the antibiotic chloramphenicol. This condition occurs due to lack of glucuronidation reactions in the baby, which leads to accumulation of toxic chloramphenicol metabolites.

- The UDP-glucuronyl transferase enzyme system of infants (especially in premature infants) is incapable of metabolizing the excessive drug.
- Insufficient renal excretion of the drug (which leads to increase concentrations of the drug in blood, which blocks the electron transport of the myocardium,liver, and skeletal muscles)

A broad diagnosis is needed for babies who present with cyanosis (discolouration of lips and skin), vomiting, ashen gray color of the skin, loss of appetite, low blood pressure (Hypotension), hypotonia, hypothermia, irregular respiration, cardiovascular collapse, abdominal distension, and increased blood lactate. The presentation of these symptoms depends on level of baby exposure to the drug. A broad diagnosis is usually needed for babies who present with cyanosis. Blood work is done to determine the level of serum chloramphenicol; the other tools also used to help in diagnosing the disease include ultrasound, CT scans, and electrocardiogram.

The rare condition can be prevented by using chloramphenicol at the recommended doses and monitoring blood levels or alternatively, third generation cephalosporins can be effectively substituted for the drug, without the associated toxicity.

If maternal use of chloramphenicol cannot be avoided, close monitoring of the baby's symptoms such as feeding difficulties, and blood work is recommended.

Gray baby syndrome is treatable. The first treatment is to stop the usage of Chloramphenicol immediately. Exchange of blood transfusion (Haemodialysis) required in removing the drug traces.

Exchange transfusion uses a dialysis machine to clean the toxins from baby's bloodstream and balances a sodium and potassium level which helps in controlling baby's blood pressure.

Sometimes, enzyme phenobarbital is used to induce UDP-glucuronyltransferase as a part of treatment and some other treatments are recommended by the doctor.

Correspondence to: Himabindhu Gude, Department of Biotechnology, Osmania University College of Science, Tarnaka, Hyderabad, Telangana, India, Tel: 8143389651; E-mail: smily.bindu20@gmail.com

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