



**Alzheimer's Drug May Reduce Brain Injury in Premature Infants**

ACCORDING TO A RECENT STUDY DONE BY THE CHILDREN'S HOSPITAL BOSTON, THE ALZHEIMER'S DRUG MEMANTINE—SOLD IN THE UNITED STATES UNDER THE BRAND NAME NAMENDA—MAY REDUCE HYPOXIC ISCHEMIA, A TYPE OF BRAIN INJURY THAT AFFECTS BABIES WHO ARE BORN PREMATURELY. THE STUDY WAS PUBLISHED IN THE JUNE 25 ISSUE OF THE *Journal of Neuroscience*.

HYPOXIC ISCHEMIA IS CAUSED WHEN A LACK OF OXYGEN RESULTS IN DAMAGE TO THE CELLS OF THE BRAIN. WHILE THE EXACT CAUSE OF HYPOXIC ISCHEMIA IN AN INDIVIDUAL IS OFTEN UNKNOWN, CAUSES MAY INCLUDE UMBILICAL CORD COMPLICATIONS, MATERNAL HYPOTENSION, AND ISSUES WITH THE PLACENTA AND/OR UTERUS. INFANTS WITH HYPOXIC ISCHEMIA OFTEN SHOW SYMPTOMS OF BRAIN DAMAGE SHORTLY FOLLOWING BIRTH.

WHILE HYPOXIC ISCHEMIA IS RARE, AFFECTING APPROXIMATELY THREE OUT OF 1,000 INFANTS, IT HAS A POOR PROGNOSIS. BETWEEN 15 AND 20 PERCENT OF INFANTS WITH HYPOXIC ISCHEMIA WILL DIE WHILE STILL NEWBORNS, WHILE UP TO 35 PERCENT OF THOSE WHO SURVIVE EXPERIENCE CEREBRAL PALSY OR OTHER NEUROLOGICAL PROBLEMS.

THE STUDY USED RATS WITH BRAIN INJURIES SIMILAR TO THOSE SEEN IN INFANTS WITH HYPOXIC ISCHEMIA. HYPOXIC ISCHEMIA IN PREMATURE BABIES CAUSES A GLUTAMATE RECEPTOR IN THE BRAIN CALLED THE NMDA RECEPTOR TO OVERREACT. NMDA RECEPTORS THAT OVERREACT CAUSE A TYPE OF WHITE MATTER BRAIN INJURY CALLED PERIVENTRICULAR LEUKOMALACIA (PVL).

RESEARCHERS AT CHILDREN'S HOSPITAL BOSTON FOUND THAT WHEN RATS WITH A TYPE OF BRAIN INJURY SIMILAR TO THOSE SUSTAINED BY PREMATURE INFANTS WERE GIVEN MEMANTINE, THE DRUG BLOCKED THE NMDA RECEPTOR, ELIMINATED OVER-ACTIVATION, AND REDUCED DAMAGE TO THE WHITE MATTER OF THE BRAIN.

WHILE ADDITIONAL STUDIES OF MEMANTINE ARE REQUIRED, RESEARCHERS ARE HOPEFUL THAT THESE EARLY STUDIES MAY RESULT IN A PROTECTIVE THERAPY FOR PREMATURE INFANTS. CURRENTLY, NO PREVENTATIVE TREATMENT FOR BRAIN

INJURY IN PREMATURE INFANTS EXISTS.

THE NEXT STEP IS A CLINICAL TRIAL THAT MEASURES THE SAFETY AND EFFICACY OF MEMANTINE IN PREMATURE INFANTS.