Gene therapy for brain tumors in early phase

Special to Sentinel-Voice

Preliminary testing of gene therapy for brain tumors is underway at Baylor College of Medicine and The Methodist Hospital in Houston.

It has taken more than two years of laboratory and animal testing to ready the therapy for human trials.

"In this early stage, we are trying to determine the therapy's safety and look for toxic effects," said Dr. Robert G. Grossman, chairman of neurosurgery at Baylor and chief of the neurosurgery service at The Methodist Hospital.

The doctors hope the therapy can one day be used as an additional treatment for malignant brain tumors. It has been tested on patients with glioblastoma and astrocytoma tumors.

Most malignant brain tumors are fatal, and surgery and radiation may add only a few months to the patient's life.

"The gene therapy treatment involves taking a common virus called an adenovirus and altering it," Grossman said.

In the laboratory, scientists change the adenovirus by removing the gene for making the virus reproduce and replacing it with a gene that will make the enzyme, thymidine kinase.

Removing the gene that make the virus reproduce keeps the adenovirus from spreading in the body.

"The altered adenovirus is injected into the brain tumor's center," Grossman said. "We use CT scans and a frame attached to the head to determine the precise location for the injection."

Once in the tumor, the adenovirus makes thymidine kinase.

When exposed to the drug ganciclovir, thymidine kinase causes the drug to become a toxin.

"The cells making thymidine kinase, which are only the brain tumor cells, destroy themselves when exposed to ganciclovir," he said.

Fifteen patients will participate in the first phase. After surgery, each patient receives several ganciclovir treatments.

"The next step will be to take the least toxic, most

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Fewer parents choosing circumcision procedure

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HOUSTON — Though a cultural and medical tradition in the United States, circumcision is on the downside as many parents of newborn sons opt not to have the procedure done.

"For Jewish and Muslim parents, circumcision is a religious choice and clearly a separate issue," said Dr. Mary L. Brandt, a pediatric surgeon at Houston's Baylor College of Medicine and Texas Children's Hospital.

Cases do arise when the procedure is a medical necessity, i.e. phimosis, which is scarring that makes it impossible to retract the foreskin; paraphimosis, in which the foreskin cannot be returned to its normal position or balanitis, infection of the foreskin.

"But for other cases, it is a matter of choice, and many of my patients' parents are declining the procedure," she said. "On either side of the routine circumcision issue, you can find an argument that has merit," Brandt said.

She cited two reasons for not choosing the procedure: there is no data to suggest a true medical advantage to the surgical removal of foreskin and as with any surgical prodecure, there is the risk of complications and infection.

For parents who choose not to have their son circumcised, it is important that they be taught how to properly care for the infant. Contrary to information, usually passed down from one generation to another, an infant's foreskin should not be retracted.

Premature foreskin retraction can cause bleeding, infection, and scarring and lead to phimosis and other problems.

As a boy gets older, gradual retraction of the foreskin during bath time will help it dilate, with full retraction usually possible by age 2 to 4. It is important that the retracted foreskin be returned to its original position after cleaning to avoid paraphimosis.

"Some of my patients' parents still prefer to have their sons circumcised, and I do perform the procedure," Brandt said. "But, as more information is available and the cultural pressure changes, more and more parents are electing not to have their sons circumcised."

New study examing oral feeding in infants

Special to Sentinel-Voice

HOUSTON—Researchers have found a way to facilitate oral feeding in infants with low birth weights.

The study, being conducted at the USDA/ARS Children's Nutrition Research Center at Baylor College of Medicine in Houston, looked at 171 infants born 26 to 29 weeks after conception.

"We used a specially designed apparatus that measured how much pressure the baby was applying to the nipple and how much breast milk or formula was flowing through it," said Dr. Robert Shulman, a Baylor professor of pediatrics and the director of the Nutrition Support Team at Texas Children's Hospital in Houston.

"We found that it is easier for premature infants to ingest milk if they regulate the flow of milk out of the nipple themselves by squeezing off the nipple," he said.

Premature infants cannot leave the hospital until they can take all of their feedings independently either by breast or bottle. Generally, they are not bottle-fed until 34 weeks after conception because they cannot coordinate sucking, swallowing and breathing to eat.

"We used a specially designed apparatus that measured how much pressure the baby was applying to the nipple and how much breast milk or formula was flowing through it"

— Dr. Robert Shulman, Baylor professor of pediatrics

Traditionally, they are then fed through a bottle that is tilted so the milk pressure produces a continual drip in the infant's mouth.

"We believe letting infants regulate the milk flow themselves will help them learn how to coordinate sucking, swallowing and breathing, Shulman said. "It will allow infants to pace themselves and decide when it's time to take a breather from swallowing milk."

The next phase of the study will examine the safest time to begin oral feeding, how rapidly infants can handle a second, third, and fourth oral feeding and why some infants have trouble with oral feeding.