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Shanghai doctors recruiting deaf patients for innovative therapy

Cai Wenjun

Shanghai Ninth People's Hospital is recruiting patients all over the world for the world's first clinical trial on gene editing-based therapy for congenital deaf people.

About two in every 1,000 children are born with congenital hearing loss. There are 26 million people around the world with congenital deafness. About 30,000 children are born deaf in China each year with 60 percent of the cases related to genetic defects, seriously impacting their language, cognition and intelligence development.

There is no effective medication so far. The major method is cochlear implants, which have many shortcomings such as

people's limited understanding of speech in a noisy environment and poor music perception.

"With the development of biomedicine, gene therapy is believed one of the most promising treatments to hereditary deafness. There are several strategies including delivering healthy genes into deaf people's inner ears to replace their sick genes. However, such therapy's effect can fade with time and patients may need to receive repeated injections to ensure hearing. Gene editing is a new approach to hereditary disease, which can edit pathogenic genes precisely and cure diseases radically in the genome," said Dr Wu Hao, president of Shanghai Ninth People's Hospital, who teams up with local scientists to develop a RNA

based-editing therapy to cure hearing loss induced by OTOF gene mutation.

The OTOF is a major deafness gene, whose mutation causes serious hearing loss and language disability among children. It is a leading reason for children with auditory neuropathy.

Wu's team has successfully developed a gene therapy targeting OTOF Q829X mutation with single viral delivery RNA-based editor. This mutation usually causes congenital profound hearing loss and is mainly detected in the Spanish population.

RNA-based editor is a cutting-edge gene-editing technology, which can modify gene sequence precisely and restore normal protein expression,

without making permanent changes to the genome.

"The treatment has been testified efficacy and safety in animal experiment and now we are carrying out clinical trials on patients with such genetic mutation, which can be cured through one injection into the inner ear," Wu said. "Our research was published on leading journal Molecular Therapy."

Currently, the gene therapy has been approved for clinical trial by the hospital's ethics committee and doctors are recruiting children with OTOF Q829X mutation-associated deafness for the trial. "We have big confidence that they are expected to restore a more natural hearing after the treatment," Wu said.

Requirements for clinical trial:

Children between 1 and 16 years old.
Severe deafness.
OTOF Q829X mutation.
Having no internal auditory deformity, no inflammation of the ears within three months.
Abide to medical procedures of the clinical trial and follow-up checks and visit.

Benefits of clinical trial

All medical expense will be covered.
Reimbursement of participant's travel and hotel expenses.
After a flight to China, clinical research coordinator and interpreter arranged to guide participants.
Insurance for all trial participants.

Contact: taoyent@sjtu.edu.cn taoyent@gmail.com (doctor's mailbox for bilingual consultation)



Above: The grannies were trained at the nursing home in Xuchang, Henan Province. Left: Grannies pose for photos with a winner of an eSports competition in Wuxi, Jiangsu Province. — Ti Gong

Happy grannies are new eSports stars

Zhu Shenshen

TWO elderly women showed up at an eSports event in Shanghai recently, not to cheer but to compete.

Wang Wenfang, known as Granny Kai Xin (happy), swiped fingers on a smartphone with a rhythmic click-clack. She sat in the center of the game stage at a Shanghai mall, eliciting smiles and cheers from over 1,000 people.

Wang, 70, has discovered a game world full of opportunities since her retirement. The DreamStar Tournament invited her to Shanghai.

"Playing games is a pleasurable adventure. It sharpens our minds

and reflexes and keeps us up to date with the changing world," said Wang.

She and her teammate Zhang Fengqin, also known as Granny Chang Le (always happy), a bank retiree, fit in nicely at the eSports site, which resembled a gaming carnival. They smiled and gestured in response to greetings from spectators, many of them dozen years younger than them.

Her gaming experience began around two years ago in a nursing home in Henan's Xuchang City. She and her friends formed an eSports team of the elderly, with the help of a senior-care center.

"We are not waiting to be looked

after; rather, we are enjoying the golden age. ESports is a platform that makes us happy," the grannies said.

Lin Huo, the nursing home's manager, assisted in the formation of the eSports team by providing professional gaming equipment, seating, and account setup.

The 26-year-old Lin connected the elderly population with the young generation's favorite games. He aired the special eSports squad, which drew notice from netizens and media.

"Grannies become energetic and excited when they touch games, just like young players," Lin told Shanghai Daily.