P453

SCREENING AND DIAGNOSTIC

The development history of newborn hearing screening in China

Lihui Huang[1,2,3*]

Beijing Tongren Hospital, Capital Medical University, Beijing, China; 2. Beijing Institute of Otolaryngology, Beijing, China; 3. Key Laboratory of Otolaryngology, Head and Neck Surgery, Ministry of Education, Beijing, China

1.

Abstract

Hearing loss is one of the most common sensory disorders in humans. The purpose of this review is to summarize the history and current status of newborn hearing screening in China and to investigate future developmental trends in newborn hearing screening with the intention of sharing experiences and providing a reference for other populations. In the 1980s, the research on hearing monitoring for high-risk infants led to the gradual development of newborn hearing screening in China. With the continuous improvement of screening technology, the newborn hearing screening program was gradually extended to the whole country and became a government-led multidisciplinary public health program. Genetic screening for deafness has been incorporated into newborn hearing screening in many regions of China to help screen for potential and late-onset deafness in newborns. In the future, it is necessary to further establish and improve whole life course hearing screening and healthcare, conduct screening for congenital cytomegalovirus infection, and create a full-coverage, whole life course hearing screening and intervention system. Screening for deafness in China has been marked by 40 years of achievements, which have been a source of pride for entrepreneurs and comfort for patients and their families. Managing hearing screening data information more efficiently and establishing a quality control index system throughout the whole screening process are of paramount importance. The genetic screening for concurrent newborn hearing and deafness has a great clinical importance for the management of congenital deafness and prevention of ototoxicity. A hearing screening and intervention system across the whole life course should be developed.

Introduction

The impact of hearing loss on children is dependent on age at onset and severity; thus, early detection is a necessity. Delaying hearing tests negatively affects growing children in terms of delayed language acquisition, speech development, literacy, and social skills. Universal newborn hearing screening (UNHS) has been widely and intensively implemented in China, enabling early detection, diagnosis, and intervention for children with hearing loss. Looking back over the previous four decades, we have a deep understanding of the difficulties encountered in the first stages of the development of newborn hearing screening program in China, and the results were achieved therein. However, many of the early important research results on newborn hearing screening in China had only been published in the Chinese literature. We write this review to help domestic and foreign scholars understand the changes in newborn hearing screening programs in China. Its purpose is to summarize the history and current status of the newborn hearing screening in the country and to investigate future developmental trends with the intention of sharing experiences and providing a reference for other regions.

Results

The history of newborn hearing screening in China over the past 40 years can be summarized into three stages: 1978–2010, the past stage of the newborn hearing screening; 2010–2023, the present stage of the newborn hearing screening; and 2023 onward, the future stage of the newborn hearing screening.

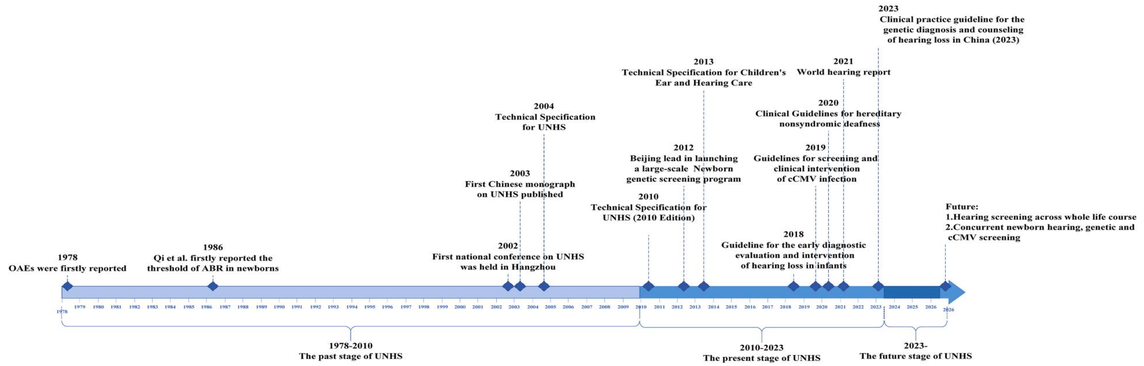

Figure 1. Timeline chart of newborn hearing screening in China

Conclusion

Newborn hearing screening in China has gradually evolved from initial localized screening to nationwide universal screening and concurrent hearing and deafness genetic screening and expanded to nationwide childhood hearing screening and care. In the future, we should implement the concept of hearing screening and healthcare across the whole life course and conduct universal detection of congenital deafness associated with congenit congenital cytomegalovirus infection screening to achieve early cytomegalovirus infection. Eventually, a comprehensive, full coverage, whole life course hearing screening and intervention system should be developed.

Reference

Wen C, Zhao X, Li Y, Yu Y, Cheng X, Li X, et al. A systematic review of newborn and childhood hearing screening around the world: comparison and quality assessment of guidelines. BMC Pediatr. (2022) 22:160. doi: 10.1186/s12887-022- 03234-0.