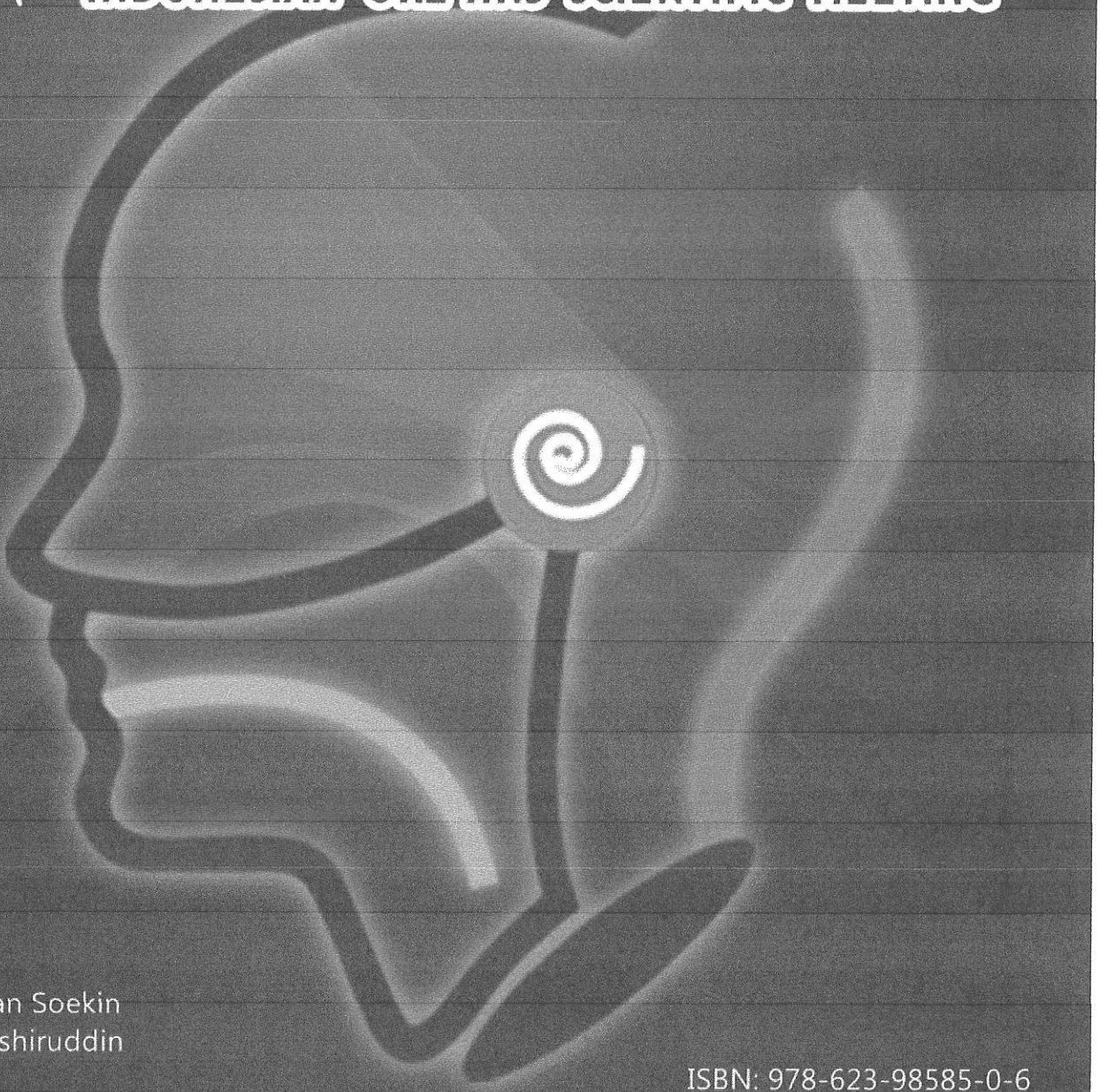
PROCEEDING BOOK

19th ASEAN ORL-HNS CONGRESS

in conjunction with

11th INDONESIAN ORL-HNS SCIENTIFIC MEETING



Editor :

Soekirman Soekin
Jenny Bashiruddin
Farhat

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Secretariat
RSUP H. ADAM MALIK MEDAN
Bunga Lau Street No.17, 20136 Medan, North Sumatera
Email: official.aseanorlhnspin2021@gmail.com

PROCEEDING BOOK OF

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"Come with a New Spirit of ASEAN Solidarity"

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"Come with a New Spirit of ASEAN Solidarity"

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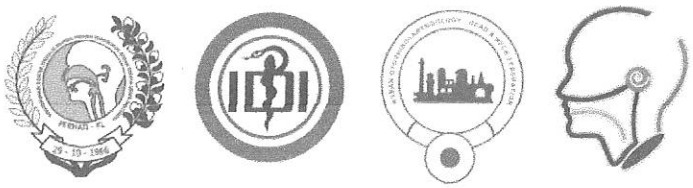

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Yayasan Perhati Sumatera Utara

Secretariat :

dr. Fatin Fatharani Erizal

Address :

RSUP H. ADAM MALIK MEDAN

Bunga Lau Street No. 17, 20136 Medan, North Sumatera

Mobile phone: +6281269241921

E-mail: official.aseanorIhnspin2021@gmail.com

Website: http://aseanorIhns-pin2021.org

WELCOME SPEECH
CHAIRMAN OF ASEAN ORL-HNS CONGRESS

Proceeding Book of 19th ASEAN ORL-HNS Congress in Conjunction with 11th Indonesian ORL-HNS Scientific Meeting was initiated and organized by ASEAN ORL-HNS Federation. This electronic proceeding aims to provide an opportunity to present and share the latest innovations and results of studies in Otorhinolaryngology-Head and Neck Surgery.

This electronic proceeding's purpose is to provide international sources of information to all ENT specialists and other health professionals who are interested in the science of ORL-HNS in the future. Also, it is expected to improve communication between ORL-HNS doctors so that it has an impact on the development of knowledge regarding and stimulates further education, competency, and equality for ORL-HNS specialists and how roles and activities of ORL-HNS doctors in building *communities in Southeast Asia.*

Electronic Proceeding of 19th ASEAN ORL-HNS Congress in Conjunction with 11th Indonesian ORL-HNS Scientific Meeting will be reviewed by experts. This proceeding book publishes original research, review articles, and case reports. We are very thankful to everybody within this community who supported the idea of establishing and developing in Proceeding Book of the 19th ASEAN ORL-HNS Congress in Conjunction with the 11th Indonesian ORL-HNS Scientific Meeting. We do hope this proceeding book is useful and acceptable to the readers.

Medan, October 2021

Prof. Dr. dr. Farhat, M.Ked(ORL-HNS), Sp.T.H.T.K.L.(K)
Chairman of ASEAN ORL-HNS Congress

WELCOME SPEECH
CHAIRWOMAN OF PERHATI-KL INDONESIA

Assalamu'alaikum Wr Wb

First of all, I would like to congratulate the North Sumatra branch of the PERHATI-KL for working hard to prepare for this event The 19th ASEAN ORL HNS Congress in Conjunction with the 11th Indonesian ORL-HNS Scientific Meeting was held, hoping that all participants can broaden their horizons, improve competence, and open future research opportunities.

This significant event is one of the efforts to increase the knowledge of PERHATI-KL members of Indonesia, considering that there are still many things that need further discussion and research. There are still many ORL-HNS health problems in Indonesia that require the hard work of all PERHATI-KL members. I hope that this event can discuss current developing knowledge and research opportunities in the future.

Thank you to all speakers and instructors, the committee of The 19th ASEAN ORL-HNS Congress in Conjunction with 11th Indonesian ORL-HNS Scientific Meeting, and all parties who have contributed to organizing this event. This event was successful with the help of many parties. Therefore, we would like to thank the many parties who have helped organize this event.

At this event, research results, reviews, and case reports were presented by researchers. The results of the seminar are then documented in this proceeding. Hopefully this event and proceeding will be useful for readers, both PERHATI-KL members and the health of the Indonesian people.

Prof. Dr. dr. Jenny Bashiruddin, Sp.T.H.T.K.L.(K)
Chairwoman of PERHATI-KL Indonesia
(Indonesian Otorhinolaryngology-Head and Neck Society)

WELCOME SPEECH
PRESIDENT OF ASEAN OTORHINOLARYNGOLOGICAL HEAD AND NECK FEDERATION

Dear all colleagues and friends,

It is an honour to welcome all ASEAN and other countries ORL-HNS specialist on 19th Asean ORL-HNS Congress and 11th Indonesian ORL-HNS Scientific Meeting. This congress is very special for us because we hope will be held on the end of Covid-19 pendemic, where until know the Covid-19 still spread on most countries in the world, by this situation the congress be held by virtual platform.

By the theme "Come with New Spirit of Asean Solidarity" 19th Asean ORL-HNS congress an Conjuction with 11th Indonesian ORL-HNS Scientific Meeting it will bring to a new level ASEAN ORL-HNS cooperation that will provide platform for all ORL-HNS specialist to share the knowledge experience discuss and argument any controversial issues and updated of knowledge and technology for variety ORL-HNS problems. This event became one of the venues for ORL-HNS specialists to present their research, as well as exchange information and deepen research issues, as well as develop sustainable collaboration.

The committee has worked very hard to ensure this event becomes the most memorable ASEAN ORL-HNS event. Not forgetting also to all those who have provided support for the organization of this event and for the preparation of this proceeding. I think as long as ASEAN ORL-HNS Federation Congress this is the first scientific proceeding be edited by the committee. I hope that this proceeding can provide benefits for all parties. Many thank you for all committee had work very professionally.

Finally, the committee would like to apologize profusely for all the shortcomings in organizing this event, starting from the socialization of the activities until the publication of this proceeding.

dr. Soekirman Soekin, Sp.T.H.T.K.L.(K), M.Kes
President of ASEAN Otorhinolaryngological Head and Neck Federation

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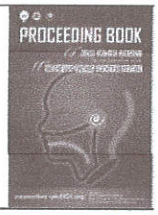

GENETIC SCREENING FOR CHILDREN WITH HEARING IMPAIRMENT IN SURABAYA SPECIAL SCHOOL

***Nyilo Purnami*[1*] , *Puguh Setyo Nugroho*[2] , *Hamam Kusumagani*[3]**

[1] *Dept of ORL-HNS, Fac. of Medicine Airlangga University/ Dr. Soetomo Academic Hospital, Surabaya, East Java*
[2] *Dept of ORL-HNS, Fac. of Medicine Airlangga University/ Dr. Soetomo Academic Hospital, Surabaya, East Java*
[3] *Dept of ORL-HNS, Fac. of Medicine Airlangga University/ Dr. Soetomo Academic Hospital, Surabaya, East Java*

Abstract

Introduction: Congenital deafness can be caused by genetic, environmental, and the interaction of these two factors. Genetic factors play about 50-75% as a cause of hearing loss. Hearing loss related to genetic factors/ Congenital Hearing Loss (CHL) can be found in two forms, namely: Syndrome Hearing Loss (SHL) and Non-Syndromic Hearing Loss (NSHL).

Objective: to initiate the genetic hearing loss screening in Surabaya, to knowing the prevalence of genetic hearing loss in Surabaya special school, identify the gene mutation for providing the next genetic mapping in Indonesia and identify the gene mutation in family (pedigree).

Methods: The design of the research are observational, cross sectional, and randomized Study. The sample was examinate by otoscopy and pure-tone audiometry. Blood samples were obtained and DNA was extracted from 5 ml blood using standard procedures.

Results: There is 49 children, we found 3 genetic mutation (PDS or SLC26A, GJB or connexin 26 and mRNA or MTRNR1 gene mutation.

Conclusion: Autosomal recessive mutations in the GJB2/connexin 26 gene are common in nonsyndromic hearing loss The genetic hearing loss screening has been initiated in students of Deaf school in Surabaya. The prevalence was found in 3 (6,1 %) students from total 49 students. Mutation varian of genetic Hearing Loss was detected in each 3 children in school, included the most prevalence varians: GJB2, SLC26A4, dan 12SRNA mitokondria.

Article Info

Keywords:
genetic screening, children, hearing impairment

Corresponding author:
Address: Perum Pandugo, Surabaya, East Java, Indonesia
e-mail: nyilo@fk.unair.ac.id

1. INTRODUCTION

Hearing is an important factor in the ability to speak and communicate verbally. The learning process for hearing babies and children is very complex and varied because it involves aspects of growth and development, embryological development, anatomy, physiology, neurology and audiology. Congenital hearing loss is one of the most common congenital abnormalities in humans with an incidence of 1-2 in 1000 newborns. At high levels of family relationship, the incidence increases to 3-4 out of 1000 population. To prevent this, many countries including Germany conduct newborn hearing screening tests with Oto Acoustic Emission (OAE) and Brainstem Evoked Response Audiometry (BERA), which are ideally performed in the first three days to one month of life.[1,2]

Indonesia's health profile in 2005 estimated that 214,100 congenital deafness occurred in 214.1 million Indonesian citizens, and this number is increasing every year due to the high birth rate of 0.22%.3 Congenital deafness can be caused by genetic, environmental, and the interaction of these two factors. Genetic factors play about 50-75% as a cause of hearing loss. Hearing loss related to genetic factors/ Congenital Hearing Loss (CHL) can be found in two forms, namely: Syndrome Hearing Loss (SHL) and Non-Syndromic Hearing Loss (NSHL).[4]

Thirty percent of congenital hearing loss is syndromic with abnormalities in other organ systems, and 70% is non-syndromic. To date, approximately 600 GPS-related syndromes have been identified, including Usher, Pandred, Stickler, Branchio-oto-renal, Down's syndromes, etc.2 Based on data from the hereditary hearing loss homepage, there are 123 genes that cause GPNS; 51 autosomal dominant (DFNA); 77 autosomal recessive (DFNB); and 5 X-chromosome (DFNX).[4]

The aim of this study is to initiate the genetic hearing loss screening in Surabaya, to knowing the prevalence of genetic hearing loss in Surabaya special school, identify the gene mutation for providing the next genetic mapping in Indonesia and identify the gene mutation in family (pedigree). The benefit of the study is significance for hearing loss screening (Diagnose on a molecular basis can early predict hearing loss disability, *detect genetic mutation which may lead to congenital deafness, hearing* loss patern and post-lingual hearing loss disability, the earlier detected, the earlier treated and intervention provide newborns babies of hearing impairment with timely and appropriate intervention services and also to knowing the risk analysis before pregnancy.

2. MATERIAL AND METHODS

The participants of this study were students of Deaf School in Surabaya Indonesia. Inclusion criteria are children with congenital hearing loss, profound SNHL (>80 dB). Exclusion criteria are having a history of head trauma, otological disease, meningitis, rubella virus infection, and using ototoxic drugs. Participant's parents who are willing to follow the research in advance fill out informed consent sheets. Medical history and pedigree information were obtained by a questionnaire.

This research was conducted ethical review (No. 243/EC/KEPK/FKUA/2020) Faculty of Medicine Universitas Airlangga on Okt, 1 2020. Ethical exemption was approved by Health Research Ethics Commitee Fac. Of Medicine Airlangga University Declared to be ethically appropriate in fulfillment of the standard indication. The design of the research are observational, cross sectional, and randomized Study. The sample was examinate by otoscopy and pure-tone audiometry. Blood samples were obtained and DNA was extracted from 5 ml blood using standard procedures.

DNA samples are amplified with biotin-marked primers by PCR. Attach amino oligo modified DNA probe onto low-density nylon HybriMem. Single stranded DNA sample anneal to complementary DNA probe on HybriMem. Optimized condition will only leave completely hybridized double stranded hybrids. Enzyme-conjugates attached onto biotin-marked DNA sample. The conjugation turns to a blue spot when

substrate (NBT+BCIP) is added. The hybribio hearing loss susceptibility kit has advantage such as high specificity and accuracy, simple operation, high efficiency, and whole process for 3 hours with hands-on time only 1 hour.

3. RESULT

There is 49 children met the criteria were included from total group 160 children in deaf school with high amount from junir high school – B for about 40 students. From the 49 children we found 3 genetic mutation (PDS or SLC26A, GJB or connexin 26 and mRNA or MTRNR1 gene mutation).

4. DISCUSSION

Hearing impairment is one of the most common sensory defects. It affects approximately 1 in 1000 newborns worldwide and about 4% of people less than 45 years of age have some form of hearing loss. Hereditary hearing loss can be classified into syndromic and non *syndromic hearing loss. Non syndromic hearing loss (NSHL) can be* inherited in an autosomal recessive manner (75–80%), autosomal dominant pattern (20–25%) or inrare instances as an X linked or mitochondrial pattern of inheritance (1–2%).[5]

Mutation of the GJB2 gene is the main cause of congenital deafness. About 50% of GJB2 gene mutations cause autosomal recessive nonsyndromic hearing loss in the world. In Turkey, about 18.9% of hearing loss patients are caused by GJB2 gene mutations.[6]

5. CONCLUSION

Genetic/ congenital hearing loss is found in two forms, namely syndromic and non-syndromic. Gene mutations are the main cause of hearing loss that occurs in the structures of the inner ear, causing sensorineural hearing loss. Autosomal recessive mutations in the GJB2/connexin 26 gene are common in nonsyndromic hearing loss The genetic hearing loss screening has been initiated in students of Deaf school in Surabaya. The prevalence was found in 3 (6,1 %) students from total 49 students. Mutation varian of genetic Hearing Loss was detected in each 3 children in school, included the most prevalence varians : GJB2, SLC26A4, dan 12 SRNA mitokondria. Genetic exam is important to provide a definitive diagnosis, early identifying syndromic/nonsyndromic deafness before the onset of other manifestations, estimating the risk of recurrence in family members, reducing the number of repeat audiological tests or additional tests for sensorineural hearing loss, and treatment options as well as outcomes.

ACKNOWLEDGMENTS

Identify the gene mutation in family (pedigree) Identify the gene mutation for providing the next genetic mapping in Indonesia

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