
EDITORIAL

A Salute to the Tenth Anniversary Issue of the *International Tinnitus Journal*, Vol. 10, Numbers 1 and 2, 2004

On behalf of my co-chief editors, Prof. Claus F. Claussen, M.D., Prof. Barbara A. Goldstein, Ph.D., and Michael D. Seidman, M.D., I salute the members of the associate editorial board, editorial board, contributors, readers, subscribers, and friends who, over the last 10 years, have established and contributed to the success of the *International Tinnitus Journal (ITJ)*.

The *ITJ* issues for this year (2004, Vol. 10, Nos. 1 and 2) mark 10 years of continuous uninterrupted publication of the *ITJ*. It is the first—and still the only—peer-reviewed journal dedicated to the symptom of tinnitus, both for understanding the basic science and for the clinical application of what is and is not known or understood of the normal and abnormal functions of the hearing and balance systems. The *ITJ*'s ultimate goals have been and continue to be establishing for the tinnitus patient an accurate diagnosis and providing treatments that can achieve a cure for all clinical types and subtypes of tinnitus.

Although our final goal of achieving that cure has not yet been reached, protocols for diagnosis and treatment that have been established have provided an increased degree of accuracy for tinnitus diagnosis and an increased efficacy for modalities of therapy attempting tinnitus relief.

The goals that we stated at the onset of the *ITJ* and that we report at this time can be simply summarized in the effort to present state-of-the-art information to benefit first and foremost the tinnitus patient.

PEER-REVIEWED MANUSCRIPTS

We continue to publish peer-reviewed manuscripts that are recognized as informative, innovative, and original, specifically on the subject of tinnitus, and strive to achieve two goals of science: first, to report the results of a testing hypothesis and, second, to record original observations and review the state of the art in any area of interest. These two goals of science have been achieved and translated for the benefit of the tinnitus patient.

Articles to be published would attempt to support a

conclusion for a theory and provide a correlation to benefit the tinnitus patient for both diagnosis and treatment. At all times, attempts have been made to avoid omission of another person's work from text and bibliography or to promote self-justification. We have maintained the integrity of science.

PROFESSIONALISM

Our goal is to publish articles that are written by professionals and are of interest to all who evaluate and attempt to treat tinnitus, regardless of clinical specialty. Too often, new thoughts are restricted by attempts of the establishment to hold within existing structural formats. The format followed here has ensured that presentations have provided a forum for discussion. The *ITJ* has focused on manuscript content and has been receptive to new concepts and ideas. It has published not only articles with positive results but also those with negative results, from which all of us have benefited for the ultimate gain of the tinnitus patient.

FOCUS ON PATIENT NEEDS

We continue to focus on the needs of patients by encouraging authors to submit manuscripts that attempt to understand basic mechanisms of tinnitus production and their clinical applications for both diagnosis and treatment. Above all, our highest priority has been to attend to the needs of the tinnitus patient. This has been accomplished by integrating clinical and basic science efforts, a process that has been ongoing internationally from the start. We extended originally in 1995 and repeat at this time an international invitation to one and all to participate in this effort. The study of tinnitus belongs to the patients and professionals, in that order, not to professionals and also tinnitus patients.

EXCHANGE OF IDEAS

An equally important goal is to provide a forum for the exchange of ideas. Expertise and assistance in writing

and editing has been extended to all authors to facilitate and expedite the expression of the authors' viewpoints. All professionals who have contributed to the *ITJ* have had complete control over the content of their manuscripts. The peer-review process of this journal, in an attempt to determine the acceptance of a new tutorial or any other manuscript, has been influenced only by the relevance of the manuscript for tinnitus and scientific merits.

Since its inception, the *ITJ* has not been an end in itself but rather has been a beginning for discussion that has as its continuing goal ultimate benefit for the tinnitus patient. Tinnitus has taught us over the last 10 years that we must understand the clinical course of patients' complaints at a previously unimaginable level of detail.

The success of the *ITJ* is a team effort reflecting a dedication of the co-chief editors working together with the associate editors and editorial board, all who are unafraid of publishing manuscripts of innovative and new ideas. Discussions have evolved from such a manuscript selection process, which has provided advances in both the basic science and clinical diagnosis and treatment of tinnitus.

The growth and development of the *ITJ* over the last 10 years has been highlighted by the emergence of advances and "firsts" for both tinnitus diagnosis and treatment, particularly for tinnitus of the severe disabling type.

New Disciplines and Concepts

Tinnitology

The emergence of a new discipline, tinnitology, identified first in 1987–1991, has been the association of multiple disciplines devoted to understanding how the perception of an aberrant auditory phenomenon can be translated into one of sensation and affect. To understand the interface between ear-brain and the mind, it is a discipline that attempts to understand an aberrant auditory phenomenon unrelated to an external source of sound.

Sensology

Sensology is a discipline dedicated to understanding the relationship of all sensations to one another and their influence on brain function. This concept is paramount in our consideration of data and articles presented for publication.

Neuroprotection

We have furthered the clinical and basic science application of the concept of neuroprotection and its application for hearing conservation, noise protection, and projected application for treatment of the symptom of tinnitus (1997).

Final Common Pathway

The hypothesis of a final common pathway for tinnitus provides a model for understanding the transformation-translation of a sensory response to an affect response (1991). The initial process is the establishment of a paradoxical auditory memory for an aberrant auditory phenomenon—tinnitus.

Basic Science

Our grasp of the basic science has encompassed several new concepts. Leupeptin, a calpain protease antagonist, is valuable for its efficacy for noise protection. Translational application of the glutamate excitotoxicity-calpain hypothesis for apoptosis provides a step in attempting tinnitus relief (1997). Identification of a benzodiazepine receptor deficiency has become possible in tinnitus patients with the severe disabling type disorder (2000). Ultrasonic hearing and its application for tinnitus relief have been explored (2003). Finally, the dynorphins have been suggested to have a possible role in peripheral tinnitus.

Diagnosis

We have furthered many important diagnostic protocols:

- A medical-audiological tinnitus patient protocol, with a goal of identifying various clinical types of tinnitus.
- Identification of different clinical types of hyperacusis.
- Application of the Feldman masking curves for improvement in the diagnosis and the efficacy of instrumentation recommended for tinnitus relief.
- Nuclear medicine imaging—single-photon emission computed tomography and positron emission tomography—used to demonstrate in patients with tinnitus of the severe disabling type interneuronal reciprocal pathways in brain. This technique is seen in multiple regions of interest, reflecting the molecular genetic basis of a neurochemistry of the neural processes involved in the sensory affect transformation (1989). These imaging capabilities have clinically provided improvement in the accuracy of tinnitus diagnosis and a monitoring system for modalities of therapy attempting tinnitus relief.
- Balance platform mathematical modeling for clinical evaluation.
- Craniocorpography for increased diagnostic accuracy of balance complaints and its application for tinnitus diagnosis and treatment by objective demonstration of the psychomotor component of tinnitus.

- Identification of a biochemical marker for tinnitus: the GABA-A receptor (2000).
- Quantitative electroencephalography—a diagnostic tool for identification of multiple electrophysiological correlates for tinnitus and a method for monitoring efficacy of therapeutic modalities attempting tinnitus relief.
- Biochemical approaches for modern neurootological tinnitus diagnosis and treatment.
- Identification of metabolic factors focusing on glucose metabolism for tinnitus diagnosis and treatment.
- Tinnitus outcome profiles (new) and tinnitus control.
- Cortical and brainstem topodiagnostic testing in tinnitus patients, as an aid for diagnosis and therapy monitoring.
- Vestibular evoked potentials and its application for tinnitus diagnosis and treatment.
- The descending auditory system cerebellum and tinnitus control.

Treatment

Advances in tinnitus treatment include ultra-high-frequency ultrasonic hearing and its application for tinnitus relief, receptor-targeted therapy directed to a GABA-A receptor, and the neurotherapy method of biofeedback. Additionally, we have pioneered in competitive kinesthetic interaction a method for tinnitus relief focusing on the behavioral component of the tinnitus symptom and its influence on the sensory component of tinnitus (i.e., the tinnitus sound itself). Diagnosis and treatment of the whiplash syndrome and its medical significance for neurootological complaints of hearing loss, tinnitus, and vertigo are a result of our efforts.

Intratympanic drug therapy with steroids has been used for treating a predominantly cochlear-type tinnitus. Intratympanic gentamicin therapy for control of Ménière's disease and the symptom of vertigo has also stemmed from our research. We have explored surgical treatment for tinnitus associated with otosclerosis, gene-based diagnosis and treatment methods for tinnitus, and tinnitus suppression with threshold and subthreshold sound stimuli. Also, we are familiar with the use of high-frequency and muscle vibration in the treatment of tinnitus.

Innovative Methods

Innovations that have arisen from our work include the role of nutrition in biochemistry for the symptom of tinnitus, consideration of medicolegal aspects of tinnitus,

and the relation between hyperinsulinemia and tinnitus. We have studied neuroprotective therapy in tinnitus relief. We also have studied Atlas therapy for the symptom of tinnitus.

In addition, we have sponsored the publication of meetings and events as they may reflect translation of information to that for the tinnitus patient and professionals involved in tinnitus diagnosis and treatment (e.g., American Neurotology Society, Israel Otology Society [1997], and the Neurootological and Equilibrium Society [NES]).

A most positive achievement includes, from the outset, the invitation to participate in the activities of the *ITJ*, extended to all professionals involved in tinnitology. This invitation is renewed at this time. Consideration of the efforts by individuals to improve advancements for the tinnitus patient is what has been achieved by the collaboration of professional efforts of the Martha Entenmann Tinnitus Research Center (METRC), the NES, and the Neurootologisches Forschungsinstitut der 4-G-Forschung e.V. (4GF), as demonstrated by the *ITJ*. Initially it was predicted that there would be a source of manuscripts reflecting the high quality of professionalism of these organizations. The *ITJ* became an official journal of the NES and for the educational activity of the International Tinnitus Forum, an educational activity of METRC now on its twenty-second year. Quality, innovative manuscripts have been received for peer review before publication. Publications have resulted in advances for tinnitology (i.e., tinnitus, bioscience, basic science, neuroscience) and have translated to clinical medicine both for diagnosis and treatment of tinnitus.

Availability of information worldwide has been a primary goal of publication of the *ITJ*. Manuscripts received in English are published in the *ITJ*. To accommodate the publication of manuscripts in languages other than English and presented at NES meetings, manuscripts are now available for exchange of information in the *NES Newsletter* (K. Trinus, editor).

At the time of the initiation in 1995 of the *ITJ*, some among us did not believe that a new journal dedicated to tinnitus would serve any purpose. The record has shown such a view to have been incorrect. It is important that this lesson be remembered for those professionals who, in the future, will have innovative thoughts for tinnitus. The history of science is replete with individuals who set themselves up to monitor what should and should not be published. Innovative efforts have been hampered by the attempts of well-intentioned individuals to direct funds and dictate the acceptance of manuscripts for publication that meet *accepted* standards. We at the *ITJ* believe that standards are necessary and have maintained standards. A respect for ideas is

considered to be essential and will continue to be in the future for the *ITJ*.

At this time, we are proud of the leadership that the *ITJ* has demonstrated in publication of manuscripts of high quality. The growth and development of the *ITJ* from its original inception and publication as an International Tinnitus Study with newsletter, which appeared on July 1, 1984, has been maintained. Recognition of advances in communication has led to the designation of an electronic *ITJ* format: the *Archives of Sensology and Neurotology (ASN)*. This addition allows for announcement of manuscript content before publication in the *ITJ* and for exchange of information worldwide. The *ASN* has been in operation since 2002 under the direction and management of the associated editors of the *ITJ* (G. Bertora, M.D., Ph.D., and Julia Bergmann, M.D.).

The growth and development of the *ITJ* has demonstrated what can be accomplished by a close collaboration of professionals (the METRC and the 4GF). The educational and research efforts published in the *ITJ* were made possible initially by both these organizations. The environment that has developed is conducive for learning both for the medical professional and for the tinnitus patient. Both organizations have supported the *ITJ* in the past, continue to do so in the present, and have planned such support for the future.

THE FUTURE

The Thirty-Second Annual Meeting of the NES is planned for Melbourne, Australia. Again, the conference will demonstrate the international character of the presentations at the NES and the international partici-

pation and dedication of the membership for advances in the neurootological diagnosis and treatment of tinnitus and hearing loss and vertigo. New texts and monographs are planned for publication, using the *ITJ* for its base of operation and for announcing distribution.

CONCLUDING REMARKS

From the outset, the invitation to participate in the activities of the *ITJ*, extended to all professionals involved in tinnitology, represented a most positive achievement. This invitation is renewed at this time. Consideration of the efforts by individuals to improve advancements for the tinnitus patient is what has been achieved by the collaboration of professional efforts of the Martha Entenmann Tinnitus Research Center (METRC), the NES, and the Neurootologisches Forschungsinstitut der 4-G-Forschung e.V. (4GF), as demonstrated by the *ITJ*. Initially it was predicted that there would be a source of manuscripts reflecting the high quality of professionalism of these organizations. The *ITJ* became an official journal of the NES and for the educational activity of the International Tinnitus Forum, an educational activity of METRC now on its twenty-second year. Quality, innovative manuscripts have been received for peer review before publication. Publications have resulted in advances for tinnitology (i.e., tinnitus, bioscience, basic science, neuroscience) and have translated to clinical medicine both for diagnosis and treatment of tinnitus. We anticipate that these advances will continue with continuing publication of the *ITJ* in the years ahead.

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