We are excited to present our winter issue of the Presbyterian/St. Luke’s Medical Center Physician Report. This newsletter will share some remarkable research findings from our physicians within the medical community.

We also congratulate the nominees and winners of the Physician Spirit Day. We have an impressive team dedicated to keeping the community healthy.

Sincerely,

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Spirit Awards

Thank you to everyone who joined us for the Physician Spirit Day and Awards Dinner in September.

During the day of celebration, physicians chose to enjoy spa services or play in a golf tournament. Nearly 100 physicians relaxed at the spa, while others took a swing at the golf competition.

We want to extend our congratulations to the winning foursome of the golf tournament: Drs. Bruce Fisch, MD, Deric Rachjaibun, MD, John Squires, MD, and Bill Stettler, MD.

And congratulations to all of our nominees for Spirit Day, especially our two winners. As a reminder, physicians are nominated by our staff, and the Presbyterian/St. Luke’s (P/SL) and Rocky Mountain Hospital for Children (RMHC) winners are chosen by our MEC. We had some very deserving nominees this year and are thankful for the incredible care and support they provide to our patients and staff.

RMHC 2019 NOMINEES:
Kristine Appel, MD (Pediatrics - Hematology/Oncology)
Jennifer Clark, MD (Pediatrics - Hematology/Oncology)
Mary Fox, MD (Pediatric Anesthesiology)
Alice Liu, MD (Pediatrics - Emergency Medicine)
Pisespong Patamasucon (PC), MD (Pediatrics - Infectious Diseases)
Jay Patel, MD (Pediatrics - Neonatal-Perinatal Medicine)
David Randolph, MD (Pediatrics - Neonatal-Perinatal Medicine)

P/SL NOMINEES:
Jeremiah Blankenship, DO (Anesthesiology)
Andras Bodoni, MD (Internal Medicine - Pulmonary Disease)

WINNERS

Alice Liu, MD
Pediatrics - Emergency Medicine
Rocky Mountain Hospital for Children

Holly Greenfield, MD
Psychiatry
Presbyterian/St. Luke’s Medical Center
idiopathic sudden sensorineural hearing loss (ISSNHL) is an otologic emergency with an incidence of about 5–20 per 100,000 of the population per year. There is no universally accepted standard protocol for the treatment of patients with ISSNHL.

**TREATMENT OPTIONS**

Hyperbaric oxygen therapy (HBOT) was first reported to improve the outcome following acute inner ear disorders during the late 1960s by both French and German authors. The increase in perilymph oxygenation produced by HBOT provides logical basis for the use of this treatment modality in ISSNHL.

We reviewed the records of 97 cases that received HBOT for ISSNHL to identify the factors that may affect the treatment outcomes. The effects of age, gender, affected ear, status of the contralateral ear, symptoms associated with hearing loss, presence of a cardiovascular disease, dyslipidemia, history of diabetes mellitus, seasonal factor, smoking, degree of hearing loss, audiogram type, medical treatments provided prior to HBOT, onset time and number of HBOT sessions were evaluated.

**RESEARCH FINDINGS**

The mean hearing gain in all cases after the HBOT was 29.5 dB. The gains were statistically significant in the following cases: early onset of HBOT \( p = 0.016 \), higher number of HBOT sessions \( p < 0.01 \), steroid usage \( p = 0.009 \), low frequency-ascending and total audiogram configuration \( p < 0.01 \), and profound hearing loss \( p = 0.011 \).

The success rate was significantly lower in cases with high frequency-descending audiogram configuration \( p < 0.001 \). The most important factor affecting the prognosis favorably was found to be steroid therapy.

This retrospective study and our clinical experience suggest that HBOT has beneficial effects when administered in the early phase of the disease together with steroids. HBOT is a safe practice when used properly by an experienced hyperbaric team. In the treatment of ISSNHL, 20 sessions of HBOT at 2.5 ATA can be tolerated with only some minor side effects. HBOT should be considered especially in cases with total or profound hearing loss.

ISSNHL is a potentially devastating condition with no definitive successful treatment regimen. HBOT has been used as a treatment adjunct for about 40 years. However, there is ongoing controversy about HBOT for the treatment of ISSNHL. Ambiguous etiology and high rate of spontaneous recovery from the disease cause debates about the efficacy of other treatment modalities as well. The only valid means to demonstrate efficiency of HBOT would be to perform a placebo-controlled study; however, such a study seems to be impossible both practically and ethically.

This retrospective study and our clinical experience suggest that HBOT has beneficial effects when administered in the early phase of the disease together with steroids. HBOT should be considered as a primary treatment, especially for the cases with total or profound hearing loss. HBOT is a safe practice when used properly by an experienced hyperbaric team. In the treatment of ISSNHL, 20 sessions of HBOT at 2.5 ATA can be tolerated well besides some minor side effects. In cases having good response to treatment with continuing hearing gain, daily single sessions and frequent audiometric follow-ups may help to define the prolonged treatment protocols.

Şefika Körpinar • Zeynep Alkan • Özgür Yiğit • Ayşe Pelin Gör • Akin Savaş Toklu • Burak Çakir • Özlem Gedik Soyuyüce • Haluk Özkul

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THE USE OF HYPERBARIC OXYGEN THERAPY IN ACUTE HEARING LOSS: A Narrative Review

Acute hearing loss can have a major impact on a patient’s life. This holds true for both acute acoustic trauma (AAT) and idiopathic sudden sensorineural hearing loss (ISSHL), two conditions for which no highly effective treatment options currently exist.

To start the investigation, a narrative review of all the literature available on hyperbaric oxygen therapy (HBOT) in acute hearing loss studies was retrieved from systematic searches on PubMed and by cross-referencing.

For example, in the U.S. Army over a two-year period, more than 882 hearing impairments were caused by AAT, and the incidence of ISSHL in the U.S. was estimated to be 27 per 100,000, which corresponds to more than 66,000 new cases per year.

The amount of hearing loss in AAT can vary between individuals and is based on the amount and duration of noise exposure. For ISSHL, the amount of hearing loss can vary from 30 dB at three frequencies, to losses of 120 dB at more frequencies.

For smaller losses, the natural course might be favorable due to the—albeit limited—repair capacity of the cochlea; however, in profound cases the chance of complete recovery is rather low. Furthermore, in cases of AAT a temporary threshold shift can occur, which makes it difficult to immediately evaluate the amount of damage and subsequently the amount of recovery. The definitions of “complete recovery,” “good recovery” and other terminology were not used unambiguously in the literature, making comparison between studies or pooling of results difficult.

RESEARCH AND FINDINGS
First, the etiological mechanisms of acute hearing loss and the mechanism of action of HBOT were discussed. In our report, we provided an overview of 68 studies that clinically investigated the effect of HBOT in the last couple of decades.

HBOT has been used quite extensively for acute hearing loss in the last few decades. This narrative review describes the rationale and clinical evidence for early initiation of HBOT combined with corticosteroids for especially severe, acute hearing loss. Even though most studies were not randomized controlled trials, we think that based on the number of studies showing a positive effect, HBOT should be discussed with patients (shared decision making) as optional therapy in cases of AAT and ISSHL.

For future studies, we recommend starting therapy as early as possible, preferably within 48 hours, and to use combination therapy consisting of HBOT and corticosteroids. Furthermore, we recommend the use of standardized outcomes with absolute and relative hearing gains, especially in the affected frequencies, and to collect speech recognition outcomes. For clinical recovery, we refer to the guidelines of the American Academy.

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Phishing (pronounced “fishing”) is the use of very convincing, but fake, messages designed to trick you into giving away your personal or company information and/or money.

**HOW DOES IT WORK?**
Phishing scams are commonly thought of as being emails, but they can also come through as phone calls, text messages or websites. No matter how the message is delivered, phishing scams are designed to persuade and deceive end users.

Criminals want to make phishing scams look and sound as legitimate as they can, which means that they will often spoof popular companies or websites. These messages are designed to look as if they are coming from a source that you trust, such as banks, popular companies or even an email provider. Phishing emails and websites usually include company logos, colors and other graphics to help persuade you into thinking the message or site is credible. In addition, many criminals create and use web and email addresses that closely resemble the real addresses. With phone scams, a person may pretend to work for a company, informing you that there is something wrong with your device or account, and that your account information is needed to “fix” the issue.

**10 TIPS TO PROTECT YOURSELF FROM PHISHING**
1. Learn the PHISH acronym for what signs are commonly seen in a phish.
2. Make sure your computer and devices are up to date with the latest software.
3. Take the time to verify the sender.
4. Only enter sensitive data on websites that begin with “https://”.
5. Be cautious when visiting websites via links in an email.
6. Never send personal or financial information via email.
7. Do not give away personal information on the phone unless you initiated the phone call.
8. Frequently check news sources or reputable websites to be aware of the latest scams.
9. Don’t overshare — be mindful and limit what you post on social media.
10. Trust your gut feeling if you have the slightest doubt or feel uncomfortable.

**THE SIGNS OF A PHISH**
P: Personal Reference or Request  
H: Hyperlink or Attachment  
I: Inaccurate Information  
S: Suspicious Sender  
H: Hurry Up and Respond

**DOCUMENTATION TIP:**
**Documenting Pancytopenia**
When documenting pancytopenia, there are two main issues to consider:
1. Pancytopenia should be documented when the patient is anemic, thrombocytopenic and leukopenic, concurrently. Documenting the three conditions separately does not permit the coding of “pancytopenia” and will result in a query for clarification of the patient’s condition.
2. The underlying cause of pancytopenia should be documented. If the patient is receiving chemotherapy for an oncologic condition and has pancytopenia as a result, this cause-and-effect relationship should be documented, as should any other condition causing pancytopenia.

“Pancytopenia due to chemotherapy and disease (lung cancer).”

Failure to document the underlying cause of the pancytopenia will likely result in a query.

Questions? Please contact Judy Taylor, CDI Specialist, at 941-737-4681 or Jeff Ruud, Continental Division Lead and Educator, at 303-961-4187.