Innovative HealthCare

YOUR GUIDE TO BETTER HEALTH

Neurological Stress Reduction Therapy
A Breakthrough Treatment for Allergy Sufferers

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Dynamic Duo for Stroke Sufferers
New Development in Stroke Treatment

Videonystagmography
New Hope to Combat Risk of Falling

The Year's Best New Health Tools

INTERVIEW:
Lucia Zamorano, MD, FICS
Michigan Brain & Spine Surgery Center

Innovative HealthCare Magazine Interview with Dr. Lucia Zamorano

Follow-up Report: New Hope to Combat Risk of Falling

By Nils Shapiro

Almost a decade has passed since The National Center for Health Statistics conducted a study that made Americans aware of the serious dangers that face people of all ages, especially those over 60 who are at risk of falling. In addition to being the number one cause of injury for anyone over the age of 18, it is the leading cause of emergency hospital visits for those over 25 (including broken hips among the elderly, whose bones weaken with age), and, of greatest concern, a contributing cause of death within one year for one out of three such patients.

With the subject of healthcare in the forefront of today's news headlines, both politically and economically, this is an appropriate time to evaluate the progress that has been made in the treatment of an issue that affects millions of Americans, but most people do not recognize this as being a serious problem until it is too late. The following profile of a member of a noted medical group practice explains the problem, as well as describes a state-of-the-art technique that health professionals now have available to them to help their patients avoid the dangers of this common risk shared by so many.

Profile: Dr. Lucia Zamorano

One expects an excellent physician to live up to his or her mission statement. Very few, however, can take it to the level that Dr. Zamorano has achieved. Here is her medical practice's mission statement as expressed on its website: "…to provide the highest quality of neurosurgical care to each of our patients in a compassionate, efficient, effective and personalized manner."

Uniquely, Dr. Zamorano and her associates are able to provide the very highest level of care by actually having developed revolutionary computer image-guided neurosurgical techniques and instrumentation that is used on inoperable tumors and other lesions of the brain and spine, here and throughout the world. Such image-guided surgery is an advanced solution to traditional surgery. The technology that Dr. Zamorano and her associates developed has revolutionized traditional surgical techniques by providing surgeons with a way to navigate through the body using three-dimensional (3D) images as their guide. It aids in shortening operating times, decreasing the size of the patient's incision, reducing the procedure's invasiveness — all of which can lead to better patient outcomes and faster recoveries.

Image-guided surgery and minimally invasive techniques also provide new alternatives for patients with multiple medical problems, patients who may not be able to tolerate large, invasive surgeries, and patients whose conditions in the past would have been considered inoperable. Dr. Zamorano and her team have also implemented intraoperative imaging including intraoperative MRI, and she was the first neurosurgeon in Michigan to use intraoperative MRI in Michigan during the resection of brain tumors. In terms of optimization of surgical accuracy, Dr. Zamorano performed the first brain robotic surgery in the USA in 2000.

Dr. Zamorano has also pioneered implementation of focal radiation treatments including delivery of radiation implants, radiosurgery and Gammaknife. Dr. Zamorano introduced in Michigan the use of focal delivery of radiation into brain tumors using brachytherapy radiation sources in 1988 and in 1989 the delivery of high focal radiation using LINAC Radiosurgery. Later she and her radiation therapy colleagues introduced the Gammaknife to Michigan.

Such benefits and special care are what Dr. Zamorano's patients have come to expect from a practice that offers an extensive range of services too numerous to list here, but which include brain and spine surgeries, cervical and lumbar spine surgery, neurosurgical oncology including brain and spine tumors, epilepsy surgery, movement disorders, advanced pain management, pituitary tumors, spinal cord injuries and traumatic brain injuries surgery, radiosurgical techniques for brain and spine tumors, Gammaknife, Minimally Invasive Spine Surgery (MIS), laser surgery and robotic surgery.

Dr. Zamorano received her medical degree from Catholic University in Santiago, Chile. She completed her residency in Surgery, Neurosurgery at Catholic University, Santiago, Chile. After finishing her residency she was granted a fellowship by the German organization Deutsche Akademische Austauschdienst to complete her Fellowships at Freie University in Berlin and Albert-Ludwig University in Freiburg, Germany. During that time she also graduated cum laude from a doctoral degree in medicine. Dr. Zamorano has been in Michigan since 1986 and has completed a fellowship at the Department of Neurosurgery, Henry Ford Hospital, Michigan.

Dr. Zamorano currently is the Director of Michigan Brain and Spine Surgery Center and serves as Professor of Neurosurgery at Oakland University William Beaumont School of Medicine. She is presently affiliated with, and performs her surgeries and other procedures at Harper University Hospital, Detroit Medical Center, William Beaumont Hospital-Royal Oak and Southeast Michigan Surgical Hospital.

The developers of the Balance+Plus technology were appreciative when Dr. Zamorano agreed to take time out from her busy schedule to answer the following questions.

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Innovative HealthCare: We are following up on a medical issue that was identified almost ten years ago to report on the progress that has been made. I am referring to the problem of "falling" and its surprisingly serious consequences.

Dr. Zamorano: Yes, the problem of "falling" is one with which we are acutely aware,

and the Joint Commission on Accreditation of Healthcare Organizations finally identified this problem as being a critical priority back in 2005.

How serious a problem is it?

A few statistics will help explain the seriousness. For example, one out of three people age 65 and older fall each year, and about 2.2 million of them need medical attention. One in ten falls causes serious injury, and 340,000 falls result in broken hips each year. Worst of all, one-third of those patients die within a year, 40 percent need a nursing home, and half who make it to rehabilitation still never walk unaided again.

I have read several reports that say that falls are a leading cause of morbidity and mortality in persons over 65 years of age. Has that been your experience?

When an individual falls frequently, even if there are no serious injuries, there is a heightened fear of falling, which is usually accompanied by a loss of confidence or self-efficacy in their ability to move around. In most cases, the tendency is then to limit daily activities, which has the domino effect of reducing physical exercise and concomitantly leads to an increase in social isolation.

The net effect is that the self-imposed restrictions on activity can lead to an increased risk of falling and greater dependency on family members to help perform daily activities. Or, worse yet, they end up in a nursing home, which is usually not a very pleasant experience.

So is this basically a problem among the aged?

You would think so, but by no means is falling a problem that only affects the elderly. Most people don't know it, but falls are the number one cause of nonfatal injuries in all age groups.

That is surprising. Why would that be the case?

While it is true that people's sense of balance and equilibrium generally becomes weaker as they get older, the problem can exist at any age. Until just a few years ago, healthcare professionals were not trained to check this aspect of their patients' condition to determine whether treatment would be needed or helpful.

How much is this problem costing the American taxpayers?

A report from the CDC said that in 2000 the direct medical costs for fall-related injuries totaled approximately $19 billion. They went on to say that the total cost of fall injuries among older adults is expected to hit $54.9 billion in 2020. That is a very expensive problem. This is one of the reasons why the nation must focus on health prevention and not just treatment.

Given the magnitude of the problem, what is currently being done to help patients with their dizziness problems?

Unfortunately, 50 percent of patients complaining of dizziness in a primary care setting are not diagnosed. To make matters worse, approximately 70 percent of such patients get a prescription for Meclizine (Antivert), which

slows down reaction time equal to a blood alcohol level of .04 to .06). Reduced reaction time is a leading cause of falls in the elderly. Some patients do seem to tolerate Meclizine well, however, and these folks can benefit from the medication in terms of reduced dizziness.

Why would a doctor prescribe a drug that could make the problem worse?

For years, that was all there was available. Unfortunately, Meclizine and most medication designed to treat symptoms of dizziness and disequilibrium can sometimes hinder the natural vestibular compensation process.

Do drugs in general create problems with the elderly as it relates to falling?

One of the keys to solving this problem is to avoid such side effects as dizziness that can be caused by medications. This is especially true for the elderly, since they may be taking several medications at the same time. Sometimes, a reduced dosage will help prevent a fall and at the same time not impair the beneficial effects of the medication. Certain high blood pressure or heart ailment drugs can also cause dizziness, so the elderly who take such medications should be watched extra closely.

We have heard that there is new equipment that makes it easy to check patients for potential balance and fall-related problems. Is that true?

Yes. Thanks to new state-of-the-art equipment and procedures that have become available, problems can be detected quickly and easily and with no discomfort whatsoever for the patient. It's like getting on a scale to be weighed. It is really a remarkable medical advance to identify cases where the problem exists and is being used by doctors who want to help their patients regain their balance for life . . . and avoid serious consequences that can be caused by falling.

How does it work?

To simplify the explanation, it's called a posturography test and uses equipment known as the Balance+Plus Fall Assessment System. This equipment looks like a weight scale but with extra computerized accessories. The patient simply steps onto it, and the system's software calculates the patient's weight and body mass index, determines his or her balance/stability/fall risk, and sends a report to the printer. In just seconds, a detailed printout documents the patient's age, sex, height, weight, body mass index, and balance/stability/fall risk score . . . graded as either normal, mildly impaired, moderately impaired, severely impaired, or profoundly impaired.

So forewarned is forearmed, and identifying the degree of any individual patient's risk for falling provides an opportunity for you to discuss whether or not treatment is called for.

Exactly. One of the things to be aware of

is that even while a patient may think he is standing perfectly still, there is what is called a "vestibular system" that senses the degree of balance and relates that instantly to the brain. This FAS system is able to translate that into a graded score. Many people at one time or another feel dizzy but don't know why. And they tend to forget it and not take it seriously. Sometimes, the problem of a balance dysfunction is caused by medications—and millions of people take many medications for all sorts of ailments.

Taking the test really does appear to be an important part of any medical examination.

Absolutely. It can be critical. And the test itself is really remarkable. More and more people of all ages—especially, but not exclusively, the elderly—are being treated and many lives are being saved as a result.

I imagine that your patients are grateful to you for being able to offer this new service.

The more they realize how serious a problem falling can be, the more they appreciate our desire to help them in this important new way.

How are you able to determine an individual patient's degree of risk for falling?

Three steps are involved in what we call a Balance+Plus Fall Prevention Program that enables us to determine not only a patient's risk of falling but also the ability to diagnose the cause of that risk and determine an effective treatment. We first ask the patient to take just a few minutes to fill out a simple form that tells us, for example, whether the patient has dizzy spells or other specific symptoms.

What happens next?

If the answers on the form give us reason to be concerned about the threat of falling—with all the serious consequences that can result—we have the patient take two minutes to step on what looks like a fancy weight scale but which is actually a very sophisticated piece of posturography equipment that measures the person's balance and provides us with a measurement of the patient's risk, ranging from no risk to serious risk and several levels in between.

That's an impressive machine. And then?

If it becomes clear from the posturography test that the patient has a serious risk of falling, we schedule a diagnostic test that gives us even greater detail and can actually provide information needed for a prescribed treatment for that specific individual.

What is involved in the diagnosis?

As with the first two procedures in the BP Program, there is no discomfort at all for the patient. Filling out a brief questionnaire and then stepping on what seems like a weight scale is clearly not uncomfortable at all. In the third and most important step of the procedure, all the patient has to do is put on a pair of specially designed really state-of-the-art and remarkable goggles.

Goggles?

Yes. These special infrared goggles are electronically connected to a computer that is able to measure, by the patient's eye and head movements, the oculomotor and vestibular systems—in other words, the patient's actual equilibrium and balance transmissions to his or her brain, which are directly tied to the risk of falling.

I have heard that vestibular abnormalities are found in 50 percent of people who fall. Is that true?

It's hard to believe, but vestibular disorders are responsible in 85 percent of patients complaining of dizziness. Vestibular evaluations, including auditory evoked potentials, electronystagmography, and videonystagmography are very sensitive in detecting auditory nerve, peripheral, positional, brainstem, or cerebellar pathology causing dizziness.

As a matter of fact, in patients with chronic balance problems, only vestibular rehabilitation has been shown to improve balance function and performance when compared with medical therapy or general exercises. I am in touch with three separate groups of physical therapists who can offer balance oriented physical therapy, covered by insurance to patients in our area.

By helping diagnose the cause of this risk, does that enable you to direct the patient to the proper, most effective method of treatment?

When you look at the very serious effects of falling, as we discussed before—broken hips, brain injury, and even death—it is clear that this test is one that should be taken by many individuals over the age of 60, when this vulnerability is at its greatest. All patients who are evaluated by us receive a program of exercises to do at home to help with balance.

Based on the statistics at all ages, the risk of falling seems to be something that should concern everyone regardless of age.

That is true, but since the patient's balance and equilibrium begin to worsen around age 60, it is even more important for people in that age range to make this posturography test an automatic part of any annual checkup. Think of it this way: In addition to helping the patient prevent bodily harm that can result from falling, it is a preventative test. This test can actually save someone's life. Our healthcare system can save billions of dollars a year by avoiding the high costs of hip surgery and even brain surgery that can result from a fall.

So, all in all, it is a benefit to both the patient and the nation as a whole.

Yes. It is a benefit that we at Michigan Brain and Spine Surgery Center are truly proud to offer as an important service to help our patients.

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