

Wed, Feb 13, 2008 HLAGR

Emergency Preparedness by Sandy Faulkner; and...

Ototoxicity by Karen Miron, Infusion Program Manager, Saint Mary's Hospital

I am Chris Jacques and president of the HLAGR chapter. We have been working on our Walk4Hearing day that we will have on June 21. I would like to make a pitch to all of you to become involved in the walk. We have a great need for more volunteers. That does not necessarily mean that you will put in many hours of time but it does mean that you can help those of us who are putting in a lot of hours. Any help we can get would be very much appreciated. If you want to help us, see Marilyn Knol, who has left the room. She would be most appreciative as chairman of the Walk4Hearing committee. Last year we raised \$35,000 so it's a real active walk. We would love to have many people involved this year to achieve our goal of \$50,000. Our intention is to use the money to put together a new Hearing Helper Center.

The concept behind this is to be able to offer to the entire community a whole range of assistive listening technologies to try out before buying. For those of you who have tried many different technologies, you know that what works for one does not work for another. People can try technology hands-on by taking it home for a week. If it is the right thing, we will have a host of places to purchase this. Our program is not set up to sell assistive technology, but to introduce you to them at no risk and be able to have a place to go to learn more about it.

Guest: Will that include hearing aids or should you still go to the audiologist for that?

Chris Jacques: These are the devices that work WITH the hearing aids. It does not include the hearing aids themselves. There are many different technologies available which is why this program would be helpful. The audiologist would be in favor of this because a lot of the technology you will see there will be available through them. They don't have the time to show you all the different technology available. One audiologist might offer a certain line and another audiologist might offer another brand. Sometimes the difference in brands is tremendous. I have tried numerous different loops and many don't work for me and if I bought the "wrong one", it would be disappointing.

Guest: Do the audiologists offer a different line?

Chris Jacques: They have to focus on specific lines because there are many. We need to be able to raise funds to be able to accomplish this. Those funds will not pay for the program but will allow us to put together a grant program that we will then be able to draw in much larger amounts of money to support this. This is intended to be seed money. We will not take on the entire cost, but think this is a great way to start. This will help out anyone in the hearing loss community in Grand Rapids and right now that is in the 40,000 person range..... and growing. It's a tremendous opportunity.

Chris Jacques: Our first speaker tonight is Sandy Faulkner who will be speaking on a number of topics.

Sandy Faulkner: I work with Deaf and Hard of Hearing Services. We came and visited here two months ago. I look forward to the organizations working together in the future. I will give a short update on what we are doing. Through a grant from the Red Cross we have fire alarms with strobe lights on them that we can distribute free anywhere in the Grand Rapids area. One of the women from the Red Cross came last year and explained this to us and Marty asked for them with lights. The woman was shocked and embarrassed, and to the Red Cross' credit they wrote a grant for them. They have 315 smoke detectors that they will disburse. If you know of anyone who is alone or takes their hearing aids out at night, I have the brochures or you can contact the Red Cross.

We have a program specifically for the hard of hearing population. We are able to give assistive listening devices to low income seniors at a low cost or free. I have cards on the table over there. Get the word out.

The third thing is emergency planning. I will ask for your feedback. The same woman from the Red Cross said if it should happen that you have a chemical spill, you would need to take water, food and a radio into a special room in your house where you could cover the opening with plastic sheeting to keep the chemicals out of that area. They will tell you via radio when it's okay to leave. The county had no special planning for the special needs population. I would like feedback from you or others you know. It's via pre-registration that if an emergency occur, you could get an e-mail or something. Right now it's too expensive to do that, but if you know other people who were involved in emergencies and you have ideas of better ways, notify my office or e-mail me. If you were to e-mail me, use deafetc@yahoo.com

We will have a fundraiser next week at Mongolian BBQ on 28th Street. The food is the same price but if you want to join us, we're meeting on Thursday the 21st at 6:30 p.m.

Chris Jacques: Next is Karen Miron. She is a pharmacist with Saint Mary's and is going to talk about the effects of drugs on hearing..... ototoxicology.

Karen Miron: I have been told since I was a child that I speak way too fast so if I do, wave at me. I will know you are not just being friendly. I will try to slow down. My specialty is not hearing. I think all of you understand the function and hearing loss better than me, but my job is to tell you how drugs are associated with hearing loss.
[PowerPoint slide presentation]

Forgive me if I misspeak or mislabel an area of the ear. The hearing damage can be caused by four groups of drugs. Salicylates are part of the NSAIDS or nonsteroidal anti-inflammatory drugs. Motrin, Aleve and all of those for joint pain act similar to

salicylates but they don't cause as much damage as aspirin. Aspirin is related closely to tinnitus. The other drugs are chemotherapy drugs, diuretics--the loop diuretics, and aminoglycosides. That is a nice long word for a group of antibiotics.

If we have time we will talk about the drugs on the bottom. These drugs have a bad reputation. I am not the expert, but for the most part the drugs affect the hearing by getting into the circular part here, the cochlear part, and also up into these semicircular canals. When those areas are affected, it's because of the fluid volumes.

The sound waves enter the ear, go through the tympanic membrane, and hit the cochlear area. The sound waves cause pressure on the auditory cells—the hairy cells that wave in nice even waves that cause the electrical sound to go to the auditory nerve—and on to the brain.

How does aspirin affect that? Salicylates are very good. Aspirin is used to treat pain, fever, inflammation and for blood thinning. Sometimes we don't want all of these effects, but it produces all of them. Sometimes it's a positive effect, sometimes negative. I laugh when I give sleeping pills because they say they may cause drowsiness. Isn't that what we want? How does aspirin cause tinnitus? Over time with high doses and prolonged use aspirin decreases the cochlear blood flow. It thins the blood and therefore causes less blood in the ear. When it does that, it changes the enzyme activity.

What happens is that the hairy cells don't move rhythmically anymore. Suddenly instead of the fluid transport in the ear, one or two are broken and the electrical impulses move around too much. They bounce around. Most people who have tinnitus have a high pitched ringing in the ears. Some people have an interruption of the sound. It depends on how the cells are damaged. This is an acid compound. Enzymes cause them to move on the nerves.

When you think of electrical impulses, in our bodies they go through short sweeps and in each is a synapse. You need an impulse to cause them to make the jump. Aspirin gets in there and causes changes. If you have hearing loss, the most important thing to remember is not to take more than the recommended dose of any salicylates like ibuprofen and Aleve.

Aminoglycosides are antibiotics that are used to treat life threatening infections. You would not get these unless you were very ill. The most common times we see these are after a joint surgery that was maybe from a car accident with a lot of debris left in a wound and there is infection. The other time is, and maybe some of you with hearing loss as infants know this, is in an infant during the labor process. If labor is very prolonged, the baby may have a bowel movement in the womb. The meconium gets into the baby's lungs and causes a severe infection. An aminoglycoside is used then. Tobramycin and Gentamicin are used. They are excreted through the kidneys. Babies don't have fully developed kidneys, so careful dosing is important.

This will give you a brief idea. When we give these drugs by injection, it runs in over an hour and is done in the hospital. You give the injection and this is the peak level. The kidneys start to work and the medication starts to work in the body. Then we give another shot. Because it never went down to zero this peak is higher. The pharmacist monitors this with both nursing and the lab. The nurse has to give the drug on time and the lab has to have drawn the level when they said they did for this to be accurate. It's a very important communication between all of them.

The green line here is the most important in saving hearing. We can give as much drug as we need to. What is important is that you have to have at least 25% of the time below the inhibitory concentration. We have to monitor to make sure the person gets below this level for 25% of the time. It allows the auditory nerve to rest and discharge what is attached there and you don't lose hearing. If we don't monitor it or get good results, the blue line would come to here. We would never get below the green line and the person goes deaf.

In this day and age we have great computer programs. We used to do this by hand. I worked here years ago and everyone did them by hand. Now I stick the blood levels in the computer and tell the doctor what level it should be the next time. I adjust the dose each time. We can change the dose over the course of six weeks. I talk about the home infusion program because we teach people how to do this at home. It gives you an idea of how we monitor the drugs.

This goes over again what I talked about. The other thing is that if you find anyone with hearing loss, we would avoid the drugs as much as possible because they are so damaging to the hearing. The important thing is that while you are on any drug you don't start another without letting the pharmacist know. I had one lady on the medication and each level was fine and normal. We talk to the patient about every third day. When I talked to her the next time, her level was sky high. She said she went to her son's wedding and she took a pill that helped her shoes fit better—a diuretic. That is a deadly combination.

There are two different kinds of drugs to get rid of excess fluids. Loop diuretics and triamterene. Those two work in a different part of the body. Generally we don't let hearing loss patients take a loop diuretic. Any diuretic decreases the amount of fluid in the body. It can also decrease the fluid in the ear. It makes the membrane between the perilymph membrane and the endolymph membrane open up. It should normally only allow a small amount of fluid, but instead these drugs allow the fluids to flow more easily and it changes the amount of pressure. This can have a permanent effect on the hearing.

If you take this drug along with the aminoglycosides, this opens the membranes and allows more of this to get into the hairy cell areas; the aminoglycosides then damage the hearing. It's harder for us to measure the hearing. By the way, the lady that went to the wedding did not lose her hearing.

These cause movement of fluid and decrease the ability to hear. Another drug that is awful on hearing is a chemotherapy agent. Hopefully none of you will need this. People with tumors in the kidney or in the leg or breast cancer use this. It's effective but 25% of the people that use it have significant hearing loss. It affects all ranges of hearing.

25% of patients have a noticeable hearing loss. 54-80% has some hearing loss, maybe not enough to notice right away but later in life. After people have recovered from cancer they want to know why hearing loss was not prevented. There was a wonderful study about sodium thiosulfate. You pre-dose them before the Cisplatin for less hearing loss. The problem is that no volunteers want to try it because you don't want to inhibit the treatment for cancer for this. So no one is willing to try it. Maybe the Cisplatin will not get rid of the tumor as effectively.

They do test in animals but that is a lot different from human hearing. We don't have a good animal model. Dogs have a heart model that is similar to ours so a lot of heart medications are tested on them. Frogs have nervous systems similar to ours. But we cannot test hearing loss on animals. Plus it's hard to ask them how their hearing is. They don't answer well.

There are a few other drugs with a bad reputation. Some of you in the room may have been victims of vancomycin. It was highly recommended and I am sure you have heard of MERSA. It's a bacterium that grows on our skin. We can fight it often because we are healthy, but when a person is sick and under stress, MERSA that is all over us can invade the body. It's a problem in every hospital. You see signs in them all that say wash hands and blow noses. It's very dangerous to the kidneys.

It's not the vancomycin that caused the hearing loss. It's made from mud in the Mississippi Delta River. The impurities were the cause of the hearing loss. Now that we are able to identify it and filter it we don't get hearing loss from this. Some of you may have lost hearing from this. Erythromycin and Clarithromycin and azithromycin are used for Legionnaire's Disease and pneumonia. These drugs are very safe if you stay within the recommended dosages. When you lose hearing is when you exceed the recommended dose. It's important to only take the prescribed amount.

I have people who say they want to get over it fast and took two a day and they lost hearing. Erythromycin in high doses can cause all ranges of hearing loss. It's irreversible when it happens. It was mainly through drug doses that we found this. We found it affected the hearing. We don't ever use the drugs if we know the person has a hereditary or congenital difference in the way their hearing is. If we know there is something different in the ear, we don't use erythromycin.

The combination drug therapies are here. Sometimes we add one drug and another and it equals triple the effect. It can be a good thing or a bad thing. Sometimes we get side effects. The combination of drugs can result in a lot of damage.

I am sure you have all heard on the news recently, I listen to all the drug commercials; you see the Viagra and Cialis commercials. Now they say if you experience hearing loss you should report it. There have been 29 reports out of the tens of thousands of men that use this. In many cases, people are embarrassed and most men are not willing to talk about the side effects. The government has decided that if you have had sudden hearing loss please report it. Only one-third of these were temporary. We don't think the side effects of the drugs resulted in the permanent hearing loss. But we need more information on this.

This has prompted something bigger. In the past, if you had a side effect, the only way to report it is to tell the doctor or pharmacist. When someone comes to me and says my middle finger turned blue after I took the pills, I don't write that down. But in reality I am supposed to write these all down. We are bad at it, at reporting the side effects. Starting in April, each time you get a prescription on your receipt or the information sheet it will give you the phone number and you can report the side effects to the government.

Someone is going to read all of them and try to categorize the side effects. So then we can figure out a better way to treat things to prevent hearing loss. This one class of drugs has prompted a huge change in how we report. That is the impetus for having the public report side effects.

Guest: Are you basically saying that drugs from Motrin to antibiotics or okay if you take them according to the instructions?

Karen: No, each individual is different and our bodies work differently. The way the kidney works or the way the body synthesizes the drugs. For the most part, if you stay within the recommended amount, you are okay.

Guest: But if you take it and had hearing tests for the last 25 years?

Karen: Everybody processes things differently. Each drug is not the same for everyone.

Guest: If you lose the hearing can you remedy it?

Karen: Nutritional supplements can be tried to correct tinnitus. Usually tinnitus affects one ear more than another. In Germany they inject aminoglycosides into the ear with the worst hearing. It ends the hearing in that ear so the other ear takes over. That seems too permanent to me.

Guest: Nothing brings back the hairs?

Karen: Tight.

Guest: Going back to erythromycin, can you bring the slide back?

Karen: I think so.

Guest: It says that if you have hereditary hearing loss, if you take the drugs are you in danger of losing hearing if you take them at all?

Karen: Those people are affected more than the general public. The erythromycin is different in the effect on hearing in that it affects the entire ear equally. People who know they have a physical problem in the ear need to avoid these drugs.

Guest: Physical ear problem as opposed to nerve loss?

Karen: In normal doses. The times for high doses were Legionnaire's Disease. We used way too high doses for that.

Sanford Freed: Azithromycin is Zithromax. I took those but no one ever warned me that there may be implications for hearing loss.

Karen: It should be fine unless you take two a day for five days. You need to take the correct dose and not exceed it.

Guest: Would you tell the physician about this?

Karen: Yes, they can give a different drug.

Guest: Always tell the doctor about the hearing loss because you are more susceptible.

Karen: Yes, remind them that you do have a significant hearing loss and the drug that they give you does not have an effect on the hearing loss.

Guest: One thing you said about the effects of drug interactions being multiplicative, my mother-in-law and father-in-law are on many medications. If they get ill, or if they have a crisis and get new medications, it's difficult to figure out what to take when. Can you speak at the special problems with this?

Karen: You used to go to the corner drug store and one pharmacist would fill them all. When you go to the Med Center now, if you don't give them a complete list you could be in trouble. You need to give a complete list of all medications.

I am the manager of the long term care facility and we take care of people in assisted living. On the weekend one of the chains in town decided to give free antibiotics. One family did not tell the pharmacist at the chain the other drugs that they were giving and that person developed a life threatening bleed. We did not know about the antibiotic but we got to the bottom of it.

It's really important when you start new drugs that you give us a complete list. Our computers are so advanced we don't need to think about the interactions, it lists them all.

Guest: I am surprised that the pharmacist knows more about the side effects than a doctor. Shouldn't the doctor know about this too?

Karen: I do a lot of consults with the physician. I go into the nursing homes and look over the meds and make recommendations for changes, but the corner pharmacist may not do the same. Hospital pharmacists go on rounds. Believe me; the pharmacist goes on rounds with the physician each morning. The pharmacist does recommend drug therapy.

Guest: If you have a bad side effect that is not necessarily a side effect, just tell them it is an allergy so they don't give it again.

Karen: A lot of patients get nauseated from some drugs so they list it as an allergy. My son is very nauseated by one drug but if it came to vomiting or living, I would give it to him. Thank you for your attention. I took too much of your time.

Sanford Freed: I am Sandy Freed. I am one of the active members in the chapter. I am here to invite you to become an active member of the chapter. We have a core group of 5-6 people who are a lot of fun and put the programs together. You can help us with small tasks. There are a variety of things that can happen. We can bring people like Karen here and many others.

Let me tell you about next month. We have a special program. A local man named Bill Barkley who lost a significant amount of his sight and hearing has a strong drive for living and went to Mount Kilimanjaro in Kenya six months ago. With the help of some terrific equipment from Phonac he went on this adventure. I want to see this room full next month. He needs to speak to 60-70 people, so each person needs to bring someone. He is a good presenter. That is March.

In April we have a great opportunity to learn about how we as people with hearing loss can learn to advocate for ourselves with state legislators. Vic Krause set up a Day at the Capitol in Lansing. The House was in session that day and recognized this large group in the gallery and we all had the opportunity to meet the legislators and talk to them and advocate for a tax credit on hearing aid purchases. Vic will talk about how we can advocate for ourselves to get others to be attentive to those with hearing loss. We can also advocate for us in Washington D.C. How many are members of the national chapter?

The rest of you need to learn about the Hearing Loss Association. There is a display table set up on the hallway. There is a magazine out there that is wonderful. It's the only magazine dedicated to hearing loss. It's a tremendous resource and a benefit from joining the national association. I invite you to take advantage of that. The national organization lobbies for you.

How many of you use captions on the television? How many know that when you go to DTV the captions are erratic? In a year when you will have to switch to the digital signal, if you count on captions you will not be happy. There is work going on with the FCC to make sure the standards for captioning will be accurate and reliable across all channels. It's a huge leap to go to digital television. This is one of the things that the national chapter is doing.

How many use cell phones? They are not universally useable with hearing aids. The national organization is working with the cell phone industry so the phones are clearly labeled and you can find one that works with the hearing aid or cochlear implant. All they ask from you is \$25 or \$30 as dues each year to support the activities.

How many of you like to walk? I would like you to come to a walk on a sunny day in June. Marilyn in the back row is the coordinator of the Walk4Hearing. We will have the second walk on this campus on June 21 in the morning and we will raise a lot of money to benefit the national chapter and this chapter, as well as the local area chapters to help people with hearing loss and deafness. Please get involved.

Marilyn can give you instructions. We want to see everyone walking and maybe signing up many people for your team. We have lots of programs that we are planning on. This is terrible, don't give me the microphone.

The next few programs I talked about. In May we may have another audiologist panel. You can ask them about hearing loss and hearing aids. We are the place to bring information to you. We are a strong resource in the community. The captions that Cheri has been typing will be on the website which Joel is so ably running and keeping up. All the past programs are on the website. If you missed one, you can read through them there.

Guest: Can you give us the address?

Sanford Freed: www.hearinglossgrandrapids.org The national chapter website is www.hearingloss.org

Joel: I want to encourage all of you to come to the next meeting, Bill Barkley. He made it to the summit of Mount Kilimanjaro. Has he been on television? Yes, he was interviewed on Good Morning America. He is going to be very inspiring. Young people would love to hear this. I am sure he will have images. Bring as many folks as you can. It will be the second Wednesday in March, March 12, at 7:00 pm in this room. Put it on your calendar. If you did not receive a postcard for this meeting, sign up and we will put you on the mailing list. Thank you.