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“The Silent Scream of Delirium: Improving prevention, diagnosis, and management in palliative care”

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Presented by: Sandra W. Gordon-Kolb, MD, CPE, MMM, Medical Director Palliative Care Services, UMMC – Fairview

Janelle Shearer: I’d like to introduce Sandra Gordon-Kolb as the Medical Director of the Palliative Care Program at the University of Minnesota Medical Center, Fairview. She’s co-Director of the Fairview Palliative Care Leadership Center and Center to Advanced Palliative Care Faculty Member. She is also a practicing palliative care consultant and is certified in Hospice and palliative medicine and internal medicine.

Dr. Gordon-Kolb has begun palliative care programs at a three-hospital system in Milwaukee, Wisconsin and has served as a Hospice medical director for several hospices. She has done prior private practice and held both administrative and academic positions in internal medicine and hospice and palliative medicine. She’s completed a Masters in Medical Management in 2008 and is a certified physician executive.

Sandra Gordon-Kolb: Good morning. It’s heartwarming to hear all the interest in your palliative care initiative and just to remind you; here at the university we’re willing to serve as a resource for you in any way that we can be helpful. I know Lynn Suronski, who is doctor a nurse practitioner and the administrative head of our program has been working very closely with Stratis to try to help you move your initiative ahead.

It sounds like we have a very interdisciplinary audience, so if some of this is in a little bit of medical detail and if there’s anything you don’t understand, please feel free to stop me along the way and ask questions as we go along.

The topic this morning is delirium and the reason I chose the title, if you look at the picture on the second slide, it’s called ‘the scream’ by Edward Monk. The reason I chose this is because it very clearly illustrates what has been described as how patients feel when they are delirious. It’s a very agonizing type of feeling and I thought visually looking at this may give you a sense of what we’re talking about today.

I don’t have any financial disclosures to present and the most important thing to remember during today’s presentation is that the FDA has no approved medication for the management of delirium, but there are a number of medications we’re going to talk about that are used and have been used over the years by a number of professionals, societies and are the best we have for recommended treatment.

Our objective today is really to introduce you to what delirium is really like, from the patient and the family caregiver perspective, the kind of suffering, morbidity,
mortality and the healthcare costs that it actually incurs for each of us. Unfortunately, the problem is not very well recognized and we don’t manage it very well in any of the facilities in which patients experience this disorder and we’re going to talk about the data that supports the sub-optimal recognition and management.

I want to try and give you some assessment tools to help you do a better job at recognizing delirium and trying to determine the type of delirium that you’re dealing with so you know how best to try and manage it. Then we want to talk about the differences in the management of delirium that is potentially reversible vs. terminal delirium states that we see commonly in our palliative patients as they enter the phase of active dying.

What is delirium?

It is a brain dysfunction. The most important characteristic of it that’s required for its diagnosis is that it is acute and onset and that it is fluctuating in process. So you may have, over the course of 24 hours, people who sometimes appear lucid and sometimes appear out of it. That’s very characteristic of what we see with delirium as opposed to dementia which is more chronic in that category and sometimes you get delirium superimposed on dementia and it becomes a bit of a challenge.

The other most important thing is that there is impaired attention, meaning that these patients are highly distractible. They look away, ramble and they’re inconsistent in their answers. You really have to have both the acute and fluctuating process and impaired attention to even consider that you are dealing with delirium.

There often is a level of disordered consciousness. These patients may be hypo vigilant, meaning they may appear sedated or lethargic or they may be hyper vigilant, which is what we see as agitation and restlessness. There may also be motor changes that are associated with this, including involuntary types of motor changes that people do where they pick at things and may have aesthetic types of motor movements.

There is also altered cognition. They may have memory deficit. They may have language impairment. They are most often disoriented in various forms. They may have abnormal perception so things we see as normal they see as abnormal and those things present either, as hallucinations, delusions or vivid dreams and often can be very fearful.

Why are we even talking about this?

It’s one of the most common problems that we encounter in medical and surgical facilities, whether it’s a long-term care facility and in particular in acute care hospitals. Unfortunately as I said before, a large percentage of cases of delirium, as much as 70% are often misdiagnosed as something else such as depression, the hypo active form in particular or it may be diagnosed late in the course of the delirium which creates consequences that we’ll talk about or it goes completely unrecognized and the patient and family simply suffer through the process.

Even when it is recognized we don’t often treat it as well as we should or manage it as well as we should and we want to talk about that. We are going to document that there is long-term suffering associated with delirium, even if it resolves. This can particularly affect caregivers, not just of dying patients but also of patients who go on and continue to be discharged from hospitals.

We are going to document the significant problems in patient morbidity and mortality associated with delirium as well as the increased cost to the healthcare
What really is the scope of the problem?

In general medical patients it’s quite prevalent. At the time of admission you can read those statistics for yourself. We see it commonly in end of life patients, almost all have some form of delirium that occurs in the last hours or days of their life. We see it very commonly in the ICU and it’s now being recognized as being a serious problem there.

In much of the research literature on how the diagnose and advantage is actually coming from the critical care literature. Post-operative patients, particularly the elderly, have delirium that occurs up to 60% of the time and tends to be a shorter form of delirium, maybe not as severe and there are efforts to try to proactively prevent this from happening.

Delirium has been around a long time and has been described since the time of Hippocrates, so again this isn’t a new problem it’s just that we haven’t looked at it in the way that we should over time.

Let’s talk about what’s really happening to the patients and to those that are caring for the patient, not including the family caregivers but also the staff that’s trying to manage the patient. We all experience difficulty as a result of this particular problem.

The palliative care literature has interviewed patients who have come out of delirium states and these are the things that patients have described about how they felt. They feel like they’re in a dreamlike, mist-like, foggy-like fate. I’ve had one patient describe where he’s floating down the river in a boat and everything is foggy around him. They feel trapped and don’t understand what’s happening all around them, but they experience it and hear it, so they perceive it but their perception is quite altered.

Again, they have visual hallucinations often of people or animals and because they are misperceiving things, they become fearful and paranoid and feel threatened by things that we think are very normal experiences in care giving. For instance, patients have described the normal care in the intensive care unit as feeling like the nurses are having a wild party.

We need to be cognizant of what’s going on in terms of how we’re acting, what we’re saying, what kind of sensory experiences we’re giving to these patients who are delirious in whatever setting they’re in.

Patients find that it’s therapeutic to talk about their delirium experiences afterwards, because it helps them to make sense of it. So if you know a patient has survived delirium, doing some supportive counseling afterwards can be very helpful. This can actually lead to Post Traumatic Stress Disorder both in the caregivers and in the patients themselves.

Again, further experiences are a sense of humiliation because they’re trying so hard to figure out what’s going on and they can’t. Sometimes the staff gets irritated or impatient with trying to do things because the patient is combative or not cooperative with what they’re trying to do and they are able to sense that, at least that’s what patients are reporting.

So again, we need to be very mindful of how we’re caring for these patients. They talk about hopelessness, loneliness, depressive types of feelings and if we can express to them that they’re being understood and valued during this
experience, even if they aren’t able to interact with us appropriately, saying to them that we understand they’re ill, that this is happening to them and we’re doing the best we can to work with them and we know it’s not their fault.

Those kinds of things are important to give to patients as they’re going through these experiences, even though you think they may not be hearing or understanding what you’re doing.

Moving on we’re going to talk about adverse outcomes as a result of this, both in terms of suffering that may be existential or physical and what the ultimate morbidity and mortality beyond this may be.

In terms of existential suffering, a large percentage of cancer patients who survive delirium again are able to recall it. Not all patients do but many do, and when they were asked to raise their distress both the patients and caregivers on a scale of four is pretty close to four, in terms of the amount of distress that they experience during these delirium episodes.

The staff caring for these patients reported similar levels of distress. These patients aren’t easy to care for. When patients do experience delusions they seem to have more distress after this, more existential suffering. Caregivers, when they’re trying to make care decisions about these patients during these times when the patients are incapacitated to do it for themselves, feel burdened because they are emotionally distressed as well as having made difficult care decisions at this time.

Bereavement should the patient die is often complicated in these caregivers and we need to be aware of that and forward that on to our bereavement people under the circumstances. Again, we talk about psychological issues, including Post Traumatic Stress Disorder that can occur. A well-known and talented physician has documented many of these things.

In terms of physical suffering, we know that patients who experience delirium subsequently have a number of complications during the course of their illness and often decline both in functional and cognitive status after whatever their acute process, illness process is resolved. There are significant increases in healthcare utilization and costs.

Patients with delirium have prolonged hospitalizations, which increases the cost and utilization of resources. They often have to be discharged to facility-level care as opposed to home and the total cost of care as of 2008, which is the most recent data we have is quite extraordinary and comparable to what we spend on cardiac care in this country a year, just to put it into perspective.

Additional adverse outcomes are that there is increased mortality, both during admission and after. These patients have been followed up to a year after delirium has resolved or has persisted. A lot of this work has been done in Boston at the Beth Israel Harvard Facility and Institution for Aging.

Persistent delirium is said to be present if the delirium is there for greater than the two-week duration. When delirium is persistent, these patients have significant increase in the risk of death. At a six month interval and also at one year, after the event and when they looked at patients in these facilities who had persistent delirium at the time of admission to a post hospital level of care, a third of these patients never resolved their delirium as of six months.

We certainly have seen patients and our experience here with multiple types of disease processes who were not dying and have persistent delirium that we just can’t make better no matter what we do. In and of itself it is an independent marker and prognostic indicator for death beyond just the underlying disease
process itself, so it is one of those other prognostic tools that we can use and find to help patients and families make decisions about care.

I talk about the diagnostic challenges that we face with delirium. Again, its fluctuating nature means that I might go in and the patient looks perfectly fine to me and the nurse goes in 30 minutes later and he/she thinks that they’re delirious, whereas another physician may have a different experience during the course of the day.

It may overlap with a number of these neuropsychiatric disorders and it makes it very difficult to sort it out. It’s frequently misdiagnosed as depression or anxiety that is an agitated delirium. We often get consults saying help us with anxiety in this patient or they get referred to psychiatry because they think these patients are anxious and they’re getting benzodiazepine which makes their delirium worse so they don’t get any better.

They may be diagnosed as failure to thrive when you have a hypoactive delirium, which isn’t necessarily the case if you can make the delirium better.

**Deliurium subtypes**, again we talked about the hypoactive form where patients look lethargic and like they don’t want to thrive. We see this more in the intensive care unit than we do on the medical and surgical floors and this is the prevalence that has been documented in the ICU.

The other one that we more commonly recognize is the hyperactive state that is the agitated patients and very much like delirium tremens that’s related to alcoholism and other drug withdrawal. The most common form is actually the mixed form, where a patient fluctuates between a hypoactive status and a hyperactive status, which is what most of us tend to see.

There is also a newer classification showing up in the geriatric literature called ‘subsyndromal’ where patients aren’t officially delirious but meet the first two criteria of delirium and seem to have a greater risk of going on to delirium, so these are patients we might want to target to be watchful for and to do as much preventative work as we possibly can.

Regardless of the subtype of delirium the outcomes appear to be the same, in terms of those we’ve already talked about, those who are hypoactive may have less existential distress, so those that aren’t as agitated may not have as much ultimate existential distress if their delirium resolves.

They all respond equally to the pharmacologic management protocols, but the doses required for hypoactive states may be less than are required for the hyperactive state and that is somewhat of a distinction.

**How do we assess delirium?**

I’ve already said it’s often difficult and challenging. These are the most common tools that are showing up in the literature. The first three are more for research tools. We do use the mental status and clinical path but it doesn’t help us differentiate delirium from dementia, although it may help us evaluate their cognition which is one of the important criteria for delirium. Some portions of that may be useful as part of the assessment process.

The two best tools, in terms of practicality in facilities regardless of whether you are a nursing home or home care agency or hospital, are the confusion assessment method fondly known as CAM. We use this in our own practice as part of our templated consultative note and we assess it at the time of the initial consult and subsequently if needed.
There is a little bit of special training that’s needed. You need to be able to use the tool correctly, but it’s not hard to learn.

There is an ICU variation of this available for patients who are ventilated, sedated and aren’t able to verbalize that has been successful used and there’s also a pediatric form of this that has been recently published in the literature as well. It’s a highly sensitive and specific tool. It is validated and it is very appropriate to use.

The companion tool for nurses which helps physicians and staff to identify which patients may be at risk or experiencing delirium is the nursing delirium scale, which is also highly sensitive and specific. It takes about two minutes to do, so it doesn’t take up a lot of nursing time. The CAM takes about five minutes to do, so again we’re not talking about lots of time involved in the evaluation that is an extra burden for the people trying to do these assessment processes.

The confusion assessment method has four elements. You must have the elements one and two present, in order to even consider that this patient has delirium. They then have to have either three or four, which means they either have to have disorganized thinking or altered level of consciousness to be able to diagnose it as active delirium.

The subsyndromal delirium only includes the first two elements, not three and four and it’s not technically delirium, but kind of that sublevel of folks that may go on to develop delirium. So if someone has one and two then you go and assess three or four. If they don’t have one and two or they have one or two, but not both than there’s no sense evaluating for three and four, so those aren’t applicable, if you don’t have a positive response regarding one and two.

So trying to interpret this is a score of zero out of four. If you have three or four out of four then you interpret that patient as having delirium.

Next is the nursing delirium screening scale and these are the things they assess. They are doing it each shift so it helps to catch the patient at multiple times, which helps pick up delirium and is an advantage because of the fluctuating nature of the process, so you’re more likely to pick it up by assessing it frequently as opposed to just trying to assess it at one point in time.

It’s scored zero out of two and if the patient has zero out of two for each element and has more than two out of ten on a total score, than delirium is said to be present.

Next are the risk factors for delirium, which you can read for yourself. The three that are an issue are: advanced age and then drug impairment that I want to talk about. This isn’t an exhausted list of the drugs, but you need to be aware that many of these patients are on these drugs because they have poly-pharmacy and whether these drugs are the cause of the delirium or not, they certainly are an aggravating factor in trying to get rid of these medications if at all possible and not use these medications during the delirium process can be helpful either in resolving or managing the delirium itself.

Sensory impairment is one of the preventative things we’ll talk about.

Patients, who are hard of hearing, don’t have their glasses, who don’t have clocks on the wall and have lots of noises and distractions going on in their environment and are at risk for delirium, particularly demented patients, are more likely to develop delirium. Try to correct sensory impairment or reduce it as much as possible in their environment. This is a helpful and preventative tool.
This is a proposed path of physiology of delirium. No one really knows for sure exactly what goes on. There is one experimental model that shows that clearly cholinergic processes are involved.

We know that the brain stem reticular formation is one of the centers of the brain that’s dysfunctional during the process of delirium that controls our sleep/awake cycle which is why the patient may be lethargic or hyper vigilant, who may have their nights and days reversed. This is commonly seen in delirium. These are the neurotransmitters or receptor cites in the brain that we believe are involved and I have designated them as being activating or suppressing.

Meaning it’s more than just neurotransmitter substance around the patients more likely to have an active delirium and pharmacology that tends to be more suppressing may actually calm the delirium process. The rationale for the management of delirium from a psychopharmacology standpoint is to try to impact the excess of these various neurotransmitters, in order to try to calm the brain down.

So the cholinergic, acetylcholine is one of the major neurotransmitters that are felt to be involved.

On the next slide, again this is a visual representation of what we think is the final common pathway that creates delirium, so it doesn’t matter what the ideology of delirium is. We think that those ideologies create some sort of oxidized stress on the brain cells and that as a result of that stress the balance between cholinergic and dopaminergic activity is imbalanced, so there is cholinergic deficiency and dopaminergic excess.

When the cholinergic activity goes down patients are less conscious, they develop inattention and as a result, of the dopaminergic excess they are agitated and have hallucinations. Again this is fairly simplistic, we don’t know if it’s entirely correct but at least it makes some sense and gives us some idea about how to choose drugs that help manage some of this delirium.

In terms of prevention of delirium, we know that using these tools has been helpful in the hospitalized elderly population. There is a program that’s been around for a while called ‘the help protocol’, and maybe some of you geriatricians can help me with that. It’s for assessing elderly patients who are at risk for delirium and falls, so it’s a proactive type of assessment usually done by nurses on the unit.

We know that if we can do somebody’s preventative processes that we can reduce the delirium risk by 36% which is pretty significant. Doing things like this in the ICU is also very important. What we try to do is, as a multi-disciplinary team, everybody needs to make an effort in identifying and managing these patients. We need to try and identify those patients at risk, so we need some sort of screening process available to trigger us and make us alert to those patients that are likely to develop delirium, if they haven’t already developed it.

And we should try to manipulate these environmental factors that we’ve talked about to help that delirium from being an overt process.

Being attentive to safety, giving them companionship so they aren’t isolated and alone, reducing over stimulation and trying to correct their sensory deficit as we mentioned earlier as well as giving them emotional support and letting them know you’re there.

Try to avoid sleep interruptions or deprivation is extremely important and how much do we do that on medical and surgical units. How much do we do that in
the ICU where interrupting and depriving these patients all the time and are there ways of doing that less in these patients we’ve identified being at risk for delirium development.

If we can create decisional support tools in our electronic medical records with our clinical pharmacists, and I know we have at least one online.

If a patient is known to have delirium they can pop up and say this patient is on anti-cholinergic drugs, they get benzodiazepine and you need to do something about that. In looking at drug interactions and toxicities that may help the clinicians that are involved, make some care decisions about the patient.

There are also delirium management protocols that some electronic medical records have in place in their computer order entry system that automatically get rid of benzodiazepine’s and give doses and frequencies for management of the pharmacologic component of delirium treatment.

There is some evidence in the literature of trying to proactively use anti-psychotics in peri-operative patients or immediately post operatively it’s been looked at, as well as post cardiac surgery patients. There is some evidence that anti-psychotics can be somewhat helpful in low doses for a limited period of time to prevent delirium in these patients. There are other drugs that have been tried, including 36:31 that affects the gabba system and cholinesterase inhibitors, the drugs that are currently used to treat dementia.

The results from this hasn’t been very positive, there have been some effects but not really all that great. Delirium hasn’t really been prevented by these drugs but sometimes the severity and duration has been decreased and we have been able to reduce the hospital length of stay. So this is an evolving area of research and we just need to keep up with what’s happening in the literature regarding this.

Again, the treatment of delirium is not anti-psychotics. Anti-psychotics manage delirium they don’t treat it. In order to treat delirium you have to correct the underlying causes of delirium. No, in some cases that isn’t appropriate or possible, particularly with patients at the end of life, but if it makes sense and it is able to be consistent with the patients goals of care then we should try to identify and correct the ideologies that we think are causing the delirium.

It’s important to review patient’s existing medications in great detail and try to remove those that we think are contributing agents, especially benzodiazepine. Do not give Ativan to patients with delirium it only makes them worse. There is a paradoxical reaction as a result of that and any agents that have a cholinergic affect, particularly antihistamines, bladder agents such as Detrol and things like that, are possible offending agents. These are very common on the hospital mark of the patient.

Opia certainly can be a cause and if we believe that neurotoxicity is present as a result of the Opioids the patient is getting. If we rotate these opioids you can resolve the neurotoxicity and reduce the impact of opioids on that particular episode of delirium.

In terms of the pharmacologic management of delirium, as I said before there aren’t really any FDA approved drugs, primarily because these are old drugs and nobody is going to do a lot of research on them but what we do have is an experienced based use of these drugs, we just don’t have a lot of well established evidence-based guidelines.

So there haven’t been a lot of blinded, random control trials on many of these agents. More of them are starting to appear and again the critical care literature
is a good place to keep an eye out for some of the evolving evidence in this
regard. 39:46 has been around for many years and there are many published
studies that show it improves delirium processes and it is a drug of choice for
pharmacological management of delirium, recommended by the American
Psychiatric Association and Society of Critical Care of Medicine.

At least three majority societies have looked at it and developed guidelines for
treatment which you can find in the literature. In terms of atypical anti-psychotic
use, those are the newer agent's risperidone, olanzapine, quetiapine, abilify, all
of those agents. There are at the present time only three controlled trials using
atypical agents that have been done between risperidone and olanzapine.

When higher doses of haloperidol paradol are required then atypicals may be an
appropriate first line treatment, but you want to try to use parental drugs and not
all these drugs come in parental form, so some are more easily accessible than
others.

In terms of protocols that have been recommended, this is the one that I use and
like where you're giving a dose of haloperidol paradol that with a dose reduced
for patients over 65 and you're giving it at least every hour, in this case every 30
minutes and that's based on the half life of these drugs and the clinical
effectiveness in terms of when you can repeat it.

We do this for three doses of the same dose rate and then if its not effective we
double the dose, do it again for three times and then double it again until we get
the patient calm. Now, if the patient gets calm then you stay at that dose and
then you look at that for a 24-hour period and if the patient is still delirious, which
they usually are, you want to schedule the previous days 24 hour requirements
every six or four hour basis and then still have some as needed doses available
for rescue.

In terms of using the 30-minute schedule, these are for patients that are severely
agitated and you need to get on top of these patients. This is like a patient in
pain crisis. We really need to view it as a medical emergency and manage it
accordingly.

You can combine the haloperidol paradol with one of the atypical anti-psychotics
for more long acting affects. The atypicals take several days to fully kick in.
Risperdal can be given in a parental form and olanzapine can be given as an
oral disintegrating tablet in order to administer it to these patients who may not
be able to swallow oral drugs.

The majority of cases that have been reported have been managed with titrated
haloperidol alone so there isn’t necessarily a reason to get other agents
involved, but again this is an evolving area that we don't have a lot of great
guidelines for, so it's done in a variety of ways and different institutions. I would
suggest if you get comfortable with one way of doing it well then do it that way
but be mindful of individual patients factors when you’re deciding on
medications.

It's important not to stop the anti-psychotic when it appears that the delirium has
resolved. Some studies recommend that we continue it for several days, up to 10
days after resolution in order to prevent it from coming back.

Next are the agents we have talked about and the comparative actions in terms
of how sedated they are, how often they're associated with extra side effects,
how much anticholinergic activity they're in and how likely they are to affect
the patients blood pressure. The more plusses the more effect they have. So again,
understanding this helps you decide which agent you may want to choose to
use.
If you have a patient with Parkinson’s disease or body dementia, quetiapine is the drug of choice or parenteral haldol. The oral form of haldol is more likely to cause side effects than the parenteral form so it’s safer in that sense, but it’s better to try not to use it in those two patient categories, if at all possible.

Chlorpromazine we use a lot in palliative medicine at end of life. It’s highly sedative and if you’re going to use it for a short period it’s a good drug. It’s inexpensive, works well and can be used in suppository form but if its used for any length of time it’s highly anticholinergic and actually patients who remain on it for any period of time, it can worsen their delirium. So it’s good and bad as all drugs are.

Risperdal and haldol are fairly comparable in terms of their side effects as you can see, with the exception of the effects.

Next are the formulations that are available, so it’s a reference for you with some comments that you can look back at that we’ve already reviewed. In terms of how much of these drugs you use, just as we’ve looked at Morphine equivalents for other opioids, several studies have looked at the haldol equivalent of the non-haldol drug and if you understand how many haldol equivalents you may be using then you can help to convert to one of these other antipsychotics, in terms of appropriate equivalent doses.

Again, this is not exact but it gives us some guidelines for choosing doses just like we do with the opioids. So in general, the amount of haldol per day needed to manage most cases of delirium that are not severely agitated is up to about five milligrams of parenteral haldol a day. On the next table I’ll show you what that means in terms of these other drugs.

If you do have an agitated, hyperactive patient then usually the doses are much higher and this is what some of the studies have shown that you need. Many studies have given patients as much as 50 milligrams a day which has been tolerated well and that’s been required to manage their hyperactive delirium. Unfortunately, we haven’t proven that managing delirium with antipsychotics prevent this existential distress that we talked about earlier if patients come out of these episodes, but their physical activity, the agitation is controlled and that is distressful for families and caregivers of these patients, so we are doing something positive.

It may help the delirium to resolve more quickly and it may prevent the patient from harming themselves, prevent them from having to be restrained, which becomes a sensory deficit that we try not to do with these patients, if at all possible.

In terms of key points and summary that I want to give you at the end is that we need lots more research on what the optimal dosing of pharmacologic management is for delirium and we need to be mindful that whatever outcome it is that we’re looking for may require different doses of antipsychotics and we need to factor that in as we’re making care decisions for these patients. It may be that the studies that haven’t shown reduction in distress in these patients is because they haven’t used adequate doses to control or manage the delirium quickly enough or well enough and it’s possible that larger doses may be needed to prevent the distress residuals but that’s theory. We won’t know until that’s looked at.

We may also find that using combination antipsychotics may be more efficacious with fewer side effects than just using haloperidol alone and there are more studies coming out to that affect, so we just need to see how that evolves. We often do use combinations here and find it works pretty well.
We talked about proactive management as opposed to being reactive and it may be again that we need to use higher doses that have been used in some studies, in order for it to be more effective than what has been shown, but again this is all supposition.

The role of non-pharmacologic approaches in preventing it, we obviously have some evidence about that, but the more work we can do with that would be helpful. More research in that direction would be useful. If we don’t impact the reasons why the delirium is occurring or attend to the ideology of the delirium, you could give that patient all the antipsychotics you want and it may be difficult to control the delirium process because it is not really correcting the underlying process.

Prevention is the most important tool we have. It has had the greatest impact on reducing the incidents of delirium and as in all of medicine the more preventative care that we can do to prevent these illnesses from occurring, the better off we are in terms of outcomes for our patients and families in our healthcare system.

A reminder that persistent, irreversible delirium which again is delirium of greater than two weeks duration is a poor diagnostic sign, a marker of limited survival and when patients have this we should think about transition to Hospice care. For cases in which it’s difficult to control agitation, palliative sedation which is a palliative medicine tool we use infrequently, but when refractory symptoms are present is an appropriate consideration in these patients if we aren’t able to get antipsychotics to control the agitation.

Delirium is the most common reason for the initiation of palliative sedation reported in the literature.

So this is a three-pronged approach that is protocol-based that I suggest based on all we’ve talked about today and the information we have in the literature to date and that is that we need to concurrently do prevention, do protection and management when we recognize cases of delirium that are present.

These are the factors that need to be addressed as a result of this, so try to put together these types of protocols in your institution in whatever way makes sense using interdisciplinary staff expertise, which is the most effective way of preventing, recognizing and managing delirium while having a positive impact of reducing costs to patients, caregivers and our healthcare system.

That’s all I have to say. It was a lot I know in one setting. I’m happy now to answer any questions I can.

If you have questions, please contact Stratis Health at info@stratishealth.org.

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