WEBVTT

NOTE duration:"01:06:25.5680000"

NOTE language:en-us

NOTE Confidence: 0.888103008270264

00:00:00.070 --> 00:00:26.520 We have 4 talks today delirium. Catatonia how to incorporate personality type into into clinical care and then we'll have lunch and then we'll talk about immune or autoimmune encephalography, so a couple of Gen generic comments. Each talk will be about an hour will hold off all the questions to the end because this will be recorded once we get started.

NOTE Confidence: 0.908506333827972

00:00:27.360 --> 00:00:58.110 Questions that you ask I'll probably repeat them. I know there's a Mike there, but I'll do my best to repeat them so try to hold off the questions to the end and less there's something that I just fundamentally miss speak on or it's just entirely inscrutable what I'm saying that's Fair. Hopefully this will be this will be engaging provocative disruptive and I suspect some of the ideas will be things that you have not heard before I hope.

NOTE Confidence: 0.910744965076447

00:00:58.110 --> 00:01:11.170 Unless you guys are like you know just know it all but hopefully they'll be somewhat interesting topics and so forth so that I'm mindful as I'm kind of going through this. I'm curious what each of you guys are specifically interested in.

NOTE Confidence: 0.839341819286346

00:01:11.750 --> 00:01:20.880 If you have a sub special like an interest within CL or kind of what your thoughts are next year addiction.

NOTE Confidence: 0.183163151144981

00:01:23.620 --> 00:01:24.140 Up.

NOTE Confidence: 0.878230273723602

00:01:25.680 --> 00:01:26.450 Got it.

NOTE Confidence: 0.621828019618988

00:01:27.320 --> 00:01:28.030 So there.

NOTE Confidence: 0.790852248668671

00:01:29.030 --> 00:01:30.120 Oh, welcome.

NOTE Confidence: 0.795225203037262

00:01:30.650 --> 00:01:38.100 And I'm sorry, Hey, Aaron, I'm the chief resident this year and I'm interested in reproductive cycle.

NOTE Confidence: 0.835254073143005

00:01:40.770 --> 00:01:46.070 Here, or you know, we are here, great and our neurologist.

NOTE Confidence: 0.765413701534271

00:01:47.300 --> 00:01:47.890 What?

NOTE Confidence: 0.833162605762482

00:01:48.980 --> 00:01:50.310 And neurocritical care.

NOTE Confidence: 0.759980618953705

00:01:51.590 --> 00:01:56.300 At Russian Socog OK got it great, well, I hear they have delirium there.

NOTE Confidence: 0.847590982913971

00:01:57.170 --> 00:01:59.480 And they haven't been catatonia, too.

NOTE Confidence: 0.893353760242462

00:02:00.040 --> 00:02:30.370 And you be talking to patients and autoimmune encephalitis, pathya, something you will probably deal with as well. So hopefully all the topics. Hopefully all the topics will actually be relevant for you as well. So good stuff trying to think if I have any other comments. I do have some handouts. I'll give them at the end of each talk. We can kind of break from the formal talk and then all hand them out. Just kind of give you guys an overview on what they are kind of value. If you guys want digital copies that's Fair.

NOTE Confidence: 0.915389776229858

00:02:30.370 --> 00:02:39.670 I'll also cite a number of papers. Obviously, if you want references to those ultimately I can get those to you as well so that I kind of think about that.

NOTE Confidence: 0.897125005722046

00:02:40.300 --> 00:02:45.620 I think that's about everything any burning questions before we get started.

NOTE Confidence: 0.915148019790649

00:02:46.490 --> 00:02:47.720 No burning questions.

NOTE Confidence: 0.885163903236389

00:02:48.910 --> 00:03:05.490 Alright alright well, just a little background before I get into this as well because once I get started. I'll try to be a little bit more by the book I guess so I was here for 4, 1/2 years I did the fellowship here.

NOTE Confidence: 0.888522446155548

00:03:06.100 --> 00:03:36.400 So that would have been 5 years ago, I finished the fellowship about. I joined on his faculty. I worked all but exclusively on bit. I was medical director of bit, for about a year and a half two years or so before I transferred then I transferred with Ben Lee, who is the section chief to the University of Rochester, which is where I've been for the last year and a half clinically. I the medical director of a team, there that we call Prime Medison, which is effectively the same thing is bit.

NOTE Confidence: 0.90568220615387

00:03:36.400 --> 00:03:40.550 I just don't like the word behavioral period like I just think it's an exceptionally.

NOTE Confidence: 0.894159734249115

00:03:41.150 --> 00:04:11.230 Yeah, I don't like it. I think it limits what we do to just kind of what people do an I just find that to be a bit dehumanizing, so I don't like that very much so. I like mental health broadly so it's proactive integration of mental health care in Madison or about 11 months into our pilot to 12 month pilot and then the other part of my kind of academic work is in delirium and states of altered mentation so.

NOTE Confidence: 0.887595355510712

00:04:11.230 --> 00:04:41.840 I just applied for career development award to study the interface between sleep disruption before cardiac surgery and delirium after cardiac surgery. They wanted to development award buckle your seatbelts. It is a It's quite an endeavour but anyway, so that's kind of my goal. My goal is to get into delirium understand what delirium is perhaps unlearn, a bit of what we've been taught about delirium to kind of move the field bored so I have some disruptive thoughts in that, but anyway.

NOTE Confidence: 0.901019036769867

00:04:42.520 --> 00:04:51.280 Any other questions thoughts reflections, you guys are awake, there's not a lot of caffeine well. I guess there is maybe something like caffeine, I have my little bit of caffeine.

NOTE Confidence: 0.879715383052826

00:04:51.790 --> 00:04:53.970 I've already had 3 copies.

NOTE Confidence: 0.84805029630661

00:04:54.710 --> 00:04:57.340 Alright sounds good. So we'll get started.

NOTE Confidence: 0.923607230186462

00:04:57.890 --> 00:05:21.950 Well good morning. Today will be talking about delirium and you'll notice that there is a key distinction here on the slide, which is delirium disorder that is not a standard term in the DSM 5. It is delirium. I think it should be called delirium disorder and I will talk about why that is in

just a moment broadly speaking will talk about evaluating it managing it and a few unanswered questions.

NOTE Confidence: 0.903672158718109

00:05:23.100 --> 00:05:53.260 So one notable disclosure I recently coded Co edited this book and in there, I wrote a chapter on delirium specifically post-operative delirium. All the images here have Creative Commons Licenses and the attributions are given on the slides and then thirdly in terms of medications. No medications approved for delirium. There are 2 sort of exceptions to this one is diazepam, which if you look at the package insert. It says that it actually is FTF group.

NOTE Confidence: 0.888376891613007

00:05:53.260 --> 00:06:23.930 Or impending or acute delirium Tremens If you guys didn't know that is actually FDA approved for DTS and rifaximin, which is approved for hepatic insep, allopathy, which although across the grades from zero to 4. It can present with delirium, though not always sometimes subsyndromal delirium, sometimes coma with swollen brain. So obviously a large large range. There so medications all discussed will all be generic, but notably again, everything would be off label.

NOTE Confidence: 0.87420380115509

00:06:23.930 --> 00:06:25.430 For the management of delirium.

NOTE Confidence: 0.906423211097717

00:06:26.310 --> 00:06:58.270 So this is why I love delirium and why you should too. That's kind of this slide. So the big knee of Lepowsky wrote 2 pretty significant monographs on delirium one in 1980. Then again in 1989. The first was delirium, acute brain failure. He got a lot of flak from that because the brain does not fail in delirium. Only the higher order cognitive processes fail in delirium. You're not in a coma, so he actually said. Well, that's a pretty Cogent.

NOTE Confidence: 0.909496486186981

00:06:58.270 --> 00:07:29.980 Argument against that term and he when he released a second book, he said. Well, we'll call that acute confusional states, but I kind of like that as a broader catchall term for encephalopathic or confusional state so this is why I love delirium delirium poses intriguing questions for everyone interested in brain behavior relationships. Cognition consciousness attention. The sleep wake cycle perceptual disturbances and organization of the mind delirium is an experiment of nature that may be observed.

NOTE Confidence: 0.931789457798004

00:07:29.980 --> 00:07:37.680 Daily on any medical or surgical Ward, it is the proof of concept that the brain.

NOTE Confidence: 0.935662150382996

00:07:38.200 --> 00:07:47.780 And the mind and the body are all intimately intertwined and I find that endlessly fascinating and you should too.

NOTE Confidence: 0.853329598903656

00:07:48.540 --> 00:08:01.270 So delirium it is the great unlearning the word delirium comes from lira, which means furrow or track, which kind of plowing metaphor historically and lira and learn interesting Lee drive from the same Proto Indoeuropean route late.

NOTE Confidence: 0.894975662231445

00:08:01.780 --> 00:08:20.630 And so I think of delirium as the great unlearning if you were to actually etymologically work that out. Another term confusion comes from from there. A Latin to pour so confusion means supporting together with or one of my favorite historical terms to describe delirium modeling.

NOTE Confidence: 0.913757860660553

00:08:21.810 --> 00:08:56.820 There are many other terms that I'm sure that you have all heard about they are not operationalized and for that reason. Those terms are clinically not preferred now if it's kind of on the border of delirium and you're like. Maybe it's up syndrome will delirium and maybe it fluctuates a lot and at the time you're seeing them. They're not they don't meet criteria for delirium in that moment cross sectionally. Maybe you say there in sefl opathic or something or altered mental status is a broader construct which includes Catatonia and mania or disorganized skits.

NOTE Confidence: 0.908735156059265

00:08:56.820 --> 00:09:15.770 The free knee and so forth that that you just do not quite sure what we're talking about yet clinically so that's a broader construct but again, they tend not to be operationalized so if delirium criteria are met that would be the appropriate diagnosis in these first two columns there are many.

NOTE Confidence: 0.923843085765839

00:09:16.560 --> 00:09:20.560 Phrases and terms, where the word delirium has been used historically.

NOTE Confidence: 0.929233610630035

00:09:21.070 --> 00:09:36.870 Some of them are kind of interesting summer less interesting, but there's a pretty long history is probably one of the longest described conditions in psychiatry and neurology in general. Everyone's talked about it for for millennia.

NOTE Confidence: 0.926399767398834

00:09:37.370 --> 00:09:49.890 There are other terms that you will sometimes see you very often will see people plucking at the bed sheet scarf aladji. They're both Greek and Latin derivatives for that same experience.

NOTE Confidence: 0.894177496433258

00:09:50.610 --> 00:10:23.060 A keening sometimes I've seen Subsalt Distending, M, which is kind of a flicking of the wrist and the attendance and that was originally described in delirium tremens. Sandra Sutton syndrome is the eponymous term for delirium. Tremens lot of different terms. You'll see in the literature fun, Delerium divisions. There are many of those as well. You guys know these I'm not terribly bought into many of these. I think that you can divide it. But I don't know that it's very helpful clinically to divide them in these different ways.

NOTE Confidence: 0.892052829265594

00:10:23.060 --> 00:10:53.110 Just one thing I'll point out here specifically sisto cerebral syndrome. This is my shadow out to Sisto cerebral syndrome. If you're not aware of it if the bladder is distended. People get delirious. This is independent of anti color effect. When you release. The tension in the bladder by straight, capping them. They get better within like I don't know 30 seconds seen this many times, so the bladder that is just ended will cause typically at least that I've seen a?

NOTE Confidence: 0.915332317352295

00:10:53.110 --> 00:11:14.160 Of a more activated agitated delirium hyperactive delirium so again. There are many different ways in which delirium might be divided. I'm going to propose a different way of dividing delirium in the toward the end. It's kind of theoretical. I admit that but I do think it offers a range of next steps in really making progress.

NOTE Confidence: 0.903766334056854

00:11:14.940 --> 00:11:26.410 So we have 4 broad topics to cover one. Why does it matter 2? What is it 3? What can we do about it and 4 a number of unanswered questions and a couple of proposals as to how we might move forward.

NOTE Confidence: 0.924113631248474

00:11:27.080 --> 00:11:58.550 So first off why does it matter well it matters to each of you because you see it all the time that's a good reason. But one, it's common broadly speaking. It's common not only to us. But in the broader medical and surgical settings. It's common. It tends to increase in terms of prevalence and incidence depending on how it's defined or what sample you're looking at with higher acuity of care as well as older age and also with advancing cognitive impairment. Those are kind of universally universally.

NOTE Confidence: 0.844873249530792

00:11:58.550 --> 00:11:59.210 Considered.

NOTE Confidence: 0.869403004646301

00:11:59.990 --> 00:12:04.200 Risk factors independence of the setting and what have you.

NOTE Confidence: 0.888434290885925

00:12:05.120 --> 00:12:35.950 It is also overlooked there's the Sutton's lie was asked why do you Rob banks that's where the money is well? We know where delirium is but strangely we're not looking there and we tend to miss a whole lot of it and I've actually cited here for studies each of which found Internist Intensivist, eating physicians and nurses all miss up to 2/3 of delirium when systematically screen using something like the camera. The Cam ICU depending on the setting depending on the sample in which instrument.

NOTE Confidence: 0.903153777122498

00:12:35.950 --> 00:12:44.810 Validated but more than half of its overlooked even though we know where we ought to be looking. We still strangely myths a great deal of it.

NOTE Confidence: 0.915522515773773

00:12:45.310 --> 00:13:16.540 It costs a lot of money almost everyone seemingly refers back to this study. It's actual analysis that a decade ago. In 2008 more than two million. Older adults, a year air at risk. That's only older adults. I mean, you obviously will have non older adults. Having delirium pediatric delirium is increasingly recognize. There's a growing literature on that an additional 17,000,000 plus hospital days attributable 2 delirium itself.

NOTE Confidence: 0.914366722106934

00:13:16.540 --> 00:13:47.540 And that's in above and beyond the comorbidities and the severity of illness and so forth and then attributable costs anywhere from 40 to 150 billion annually, and this of course includes not only hospital costs but related to complications re admissions institutionalization falls and so forth over. I believe the analysis was over the year following the index. Delirium episode, but again is substantial cost to the system but not only that it's distressing so its life interrupted nobody who is delirious.

NOTE Confidence: 0.90561056137085

00:13:47.540 --> 00:13:48.620 Is living their life?

NOTE Confidence: 0.920485615730286

00:13:49.150 --> 00:14:19.180 Period your relationships are suspended. You're not working you're not doing your hobbies. Your not out on a cruise. You're not out at the beach, you're not spending time with your grandchildren. You're not living life. So it can cause apathy paranoid ability basically anything that

psychiatric conditions would present as it's the Great Chameleon and mimics pretty much everything and in fact, it's a universal rule out in the DSM but.

NOTE Confidence: 0.914104998111725

00:14:19.180 --> 00:14:36.260 We'll talk about this a little bit later. I would still look for catatonic features in the context of delirium. It does have diagnostic value and even perhaps treatment value. Perhaps giving an Ativan challenge and seeing if that doesn't clarify there's some souryam to some extent.

NOTE Confidence: 0.851876437664032

00:14:36.840 --> 00:14:43.290 Liberate them and also help engage them in care so we'll get to that a little bit later.

NOTE Confidence: 0.930765330791473

00:14:44.130 --> 00:15:06.820 It's also dangerous so people who are serious fall risk. They're not thinking as clearly so they might get up without thinking about it, they might be impulsive not taking care of themselves. People are giving medications. They're refusing their combat if they can pull out and a line they can do all sorts of things that are dangerous and so the phenotype itself is dangerous.

NOTE Confidence: 0.930322289466858

00:15:08.020 --> 00:15:38.400 It's also a bad omen. There's a lot of debate at least right now in the literature as to how much of the bad outcomes, both in the hospital and long term outcomes are directly attributable to delirium versus to what extent are those that outcomes attributable to the causes of delirium in combination with or interacting with the degree of vulnerability that the individuals have, but the fact of the matter is, if you have delirium and you don't do sophisticated analysis people who have delirium are sick and these are.

NOTE Confidence: 0.934469759464264

00:15:38.400 --> 00:16:06.960 By and large, the individuals who have bad outcomes, so to have delirium is not a good thing and in fact, it looks as though based on a couple of recent studies that delirium may even accelerate the process of cognitive decline. In fact, there's some interesting and provocative studies out there about that. The jury is not entirely settled on that. But there's a good thought that there is and get into that later if you're interested in some of those references.

NOTE Confidence: 0.889978885650635

00:16:07.970 --> 00:16:18.650 Not like that delirium is on the rise in terms of academic interest. This is a recent publication by recent I mean, I think this past month doctor McCoy.

NOTE Confidence: 0.882141470909119

00:16:19.250 --> 00:16:27.250 Add in GH, I believe psychosomatics the number of delirium publications continues to climb annually.

NOTE Confidence: 0.924768149852753

00:16:28.540 --> 00:16:50.330 And a lot of journals unique journals are getting in on it, and so back in 95, there were handful of journals, getting in on it, and then add back in 2014, which is the time. This analysis terminated you see over 250 journals. Unique journals in 2015, published an article on delirium.

NOTE Confidence: 0.933122396469116

00:16:51.390 --> 00:17:23.400 And the thing that we need to be aware of is most of which are outside of psychiatry. The bottom line is those unique publications in psychiatry journals versus those outside of it and so intensive care journals. Geriatrics alot of nursing journals. It's really kind of far and wide outside of psychiatry and in fact, delirium is increasingly thought of as kind of this multidisciplinary thing.

NOTE Confidence: 0.910814523696899

00:17:23.400 --> 00:17:33.560 And not uniquely psychiatric and in fact, is not a psychiatric condition formally speaking. It's really it straddles it straddles the fence in that in that regard.

NOTE Confidence: 0.925788760185242

00:17:34.290 --> 00:17:42.510 So again it matters because it has a great deal of impact on the patient their family outcomes medical system and the light.

NOTE Confidence: 0.919313609600067

00:17:43.120 --> 00:18:13.530 But what is it and this is a fascinating question that we've all heard different answers to so I'm going to give you a sampling of what people will say delirium is delirium is a disorder of brain wave slowing some pioneering work by Romano, an angle in the 40s looking at and defining the EG characteristics. The diffuse slowing they were in Cincinnati at the time it got published around the time that they moved to Rochester, but pretty.

NOTE Confidence: 0.895358383655548

00:18:13.530 --> 00:18:46.120 Some of these studies were medical students where they actually simulated you know like they cause hypoglycemia is great. I mean, the time I guess I Arby's didn't really care as much so it was, it was a prior. It was a prior era in research. So is it a brain wave slowing disorder is it a disorder of acetylcholine deficiency. A lot of people talk about that and even still even modern day we talk a lot about that. We talk about acetylcholine or cholinesterase cholinesterase activity in the blood and it's really fascinating so there's thought given.

NOTE Confidence: 0.905302405357361

00:18:46.120 --> 00:19:07.100 So that is, it is a disorder of aberrant stress response and people suspect or kind of conceptualize it as an apparent stress response condition is a disorder of glucose metabolism. We know that glucose is not metabolised appropriately in the brain as it would be in the healthy brain and in fact, there's a research group out of leave Australia.

NOTE Confidence: 0.922995626926422

00:19:07.760 --> 00:19:38.080 Under Doctor Kaplan, who is looking at intranasal insulin. I believe to improve cognition impatience with delirium. So it's thought that by utilizing glucose in the brain that you might actually have an impact on cognitive function is it a disorder of system integration failure specifically in relation to the default mode network and Jose Maldonado recent review that he has.

NOTE Confidence: 0.918576955795288

00:19:38.080 --> 00:19:47.930 Kind of explores the convergent evidence that speaks to brain network dysfunction as perhaps the final common step in the pathway.

NOTE Confidence: 0.908593237400055

00:19:48.670 --> 00:20:18.900 In reaching delirium is it a disorder of imbalance or alternatively of threshold do people have a delirium threshold to some people have a higher delirium threshold than others would some peoples delirium threshold being different in relation to specific insult so that some people are more susceptible to inflammatory insults. Some might be more susceptible to nutritional insult. You name it, but there's an interesting question about.

NOTE Confidence: 0.930210053920746

00:20:18.900 --> 00:20:23.290 That relationship between reserve and the physiological insult.

NOTE Confidence: 0.914471685886383

00:20:24.090 --> 00:20:54.420 Is it a disorder of wake or circadian integrity in fact? I mentioned lepowsky earlier? He hypothesized back in the 80s and then again in 1990 that delirium might be best thought of as a disorder of wakefulness fact that was his theoretical model, he actually suggested that it was best or perhaps well defined or described by its relationship with wakefulness and sleep disruption is a disturbance specifically in circadian integrity, I've.

NOTE Confidence: 0.933066427707672

00:20:54.420 --> 00:21:07.500 Published a paper, arguing or perhaps suggesting that it might represent a circadian a rythmia that the rhythm of circadian processes in the body are fundamentally disrupted throughout the course of 24 hours.

NOTE Confidence: 0.888376951217651

00:21:08.350 --> 00:21:27.790 Is that delirium I mean? I've had that important question so this is one of this is housing. Mauldin autos more recent were updated wonderful network charts. It's a question do. These all fit into delirium and with that all be 1 condition? Are we talking about multiple overlapping conditions.

NOTE Confidence: 0.91050910949707

00:21:28.930 --> 00:21:57.260 I want to use I want to use this point, though, to kind of ground us in terminology and this gets back to my title slide delirium disorder. We use the word indiscriminately and that is my first and primary love language. That's my first and primary concern with the literature right now, we use the word. We say we mean 3 things and they are not the same thing. We need to be univocal or have one word with one idea and that's where I think a good place to start.

NOTE Confidence: 0.825478732585907

00:21:57.900 --> 00:22:07.660 So first off delirium plural deliriums or Deliria related terms things that cause delirium delirium. Gensler fashions deliriants delirious and adjective.

NOTE Confidence: 0.877094209194183

00:22:08.220 --> 00:22:38.530 But number one delirium is a diagnosable to sort of. The per the DSM or the icd period right. So we say they have too much. The diagnosis delirium OK. That's number one and #2. An identifiable clinical syndrome. So we say they have a Cam positive delirium. Where can positive for them. We're not saying that they have an underlying cause we're not saying that they have this broader diagnostic. They haven't met all diagnostic criteria for the DSM necessarily your Cam positive I had a

NOTE Confidence: 0.882515490055084

00:22:38.530 --> 00:23:07.350 Find a floridly disorganized patient who had psychosis, they would be Cam positive and you could argue that became positive delirium, but are they delirious in the DSM sense of it and I would say no they're not. But that's an interesting question why people Catatonia might if you just went in there would be positive does that mean that they have to lyrium well. No, it doesn't we should use our clinical hats to say no these are different things. So there is a distinction between the diagnosis and the phenotype of delirium.

NOTE Confidence: 0.883750915527344

00:23:07.940 --> 00:23:30.860 And 3rd of all frenzied excitement or agitation or alternatively what we quote treat with neuroleptic so they were floridly delirious? What do you mean by that? Well, they were combat if they were thrashing about they were punching at at the nurse when they when the nurse, was trying to help them or try to get them up to kind of get to the restroom reposition them or something so I have proposed.

NOTE Confidence: 0.889515101909637

00:23:31.590 --> 00:24:03.740 That we use unique terms to describe these the disorder that you diagnose should be delirium disorder. It follows the trends in neuro cognitive sort of major nor cognitive disorder right? That's the broad construct. It's a disorder next delirium. That should be the clinical syndrome, very often medical students will ask well well wait wait wait wait. Now there delirious. But if they're not confused later in the day are they still delirious because they still have the diagnosis delirium well. That's because our terms. We're using the same word to describe.

NOTE Confidence: 0.879839956760406

00:24:03.740 --> 00:24:31.060 Sure, things they still might qualify for that 24 hours for having a diagnosis of delirium. You know they might be confused later that evening. But in the moment cross sectionally. They do not have delirium. The phenotype of delirium disorder but not have delirium right so the two are dissociable that's the key factor and then finally features of delirium the things that we're creating we need to be clear that we are symptom. We're symptomatically treating the patient when it comes to agitation psychotic symptoms and so forth.

NOTE Confidence: 0.923680305480957

00:24:32.530 --> 00:24:38.560 So this is a pared down version of a model that I published last year on including with Joe Flarity.

NOTE Confidence: 0.898892402648926

00:24:39.150 --> 00:25:11.690 And as they Maldonado and this was about 3 years in the making, but I really wanted to think a bit about how I wanted to kind of clean or conceptual ization of what delirium is and how I think about it clinically to guide management. One and #2 to guide the field forward next? What are the next steps and so this is kind of a simplified version of that you have a number of pro cognitive factors that promote cognitive health pro for promote promote positive health and then you can have deficiencies in these that would.

NOTE Confidence: 0.914304673671722

00:25:11.690 --> 00:25:32.980 Suggest unique vulnerability signatures if you will and then you have 3 elements of delirium disorder that precipitants. Some intervening neurophysiology and then finally delirium. The syndrome with or without a number of concerning psychiatric symptoms and we will take each of these in turn, as we think about management.

NOTE Confidence: 0.893420934677124

00:25:33.870 --> 00:25:36.050 So we will start with the phenotype.

NOTE Confidence: 0.903857827186584

00:25:36.570 --> 00:25:37.660 And work our way back.

NOTE Confidence: 0.897309958934784

00:25:38.620 --> 00:26:09.020 So first off delirium the syndrome so we know what delirium is I'll just make a few comments here. It is a clinical syndrome. The reference standard is a psychiatrist using the DSM criteria something called the gold standard lot of people in the broader delirium field would kind of bristle at that idea. It was historically the reference standard when the Cam was originally kind of validated if you will so but it is the reference standard kind of a formal psychiatric evaluation so you all are the reference.

NOTE Confidence: 0.872572004795074

00:26:09.420 --> 00:26:23.350 Words right that's what kind of historically we have been although more recent studies have included actually neurologists, giving a diagnosis delirium as a reference standard as well as Geriatricians and so forth so it's based on the clinical evaluation.

NOTE Confidence: 0.873584926128387

00:26:24.160 --> 00:26:26.630 And then I think it is having forays.

NOTE Confidence: 0.89773815870285

00:26:27.480 --> 00:26:34.640 Plus, one, so the 4A's that are required in acute change invitation, which is over the course of hours of the days.

NOTE Confidence: 0.937232196331024

00:26:35.160 --> 00:27:05.460 #2 attention is reduced and there are 3 domains of attention to think about 1:00 can they focus if they can't focus on you do not? Do months of the year backward you don't need to do that. They are already inattentive. You are wasting your time and perhaps agitating. The patient if they are all over the map and will gathering and cannot give you eye contact and muttering to themselves and everything you do to engage them is.

NOTE Confidence: 0.786290049552917

00:27:05.460 --> 00:27:06.110 Failing.

NOTE Confidence: 0.905757248401642

00:27:06.960 --> 00:27:33.250 Don't do world backward don't do months of the year backward don't even do vigilance a task switches. You do Casablanca and say squeeze on a don't, they're already positive so they have to focus attention. But they can focus attention. You have 2 further questions to ask they sustain attention. That's what those tests that we just talked about get at sustained attention and then 3rd of all can they shift.

NOTE Confidence: 0.906991183757782

00:27:33.930 --> 00:28:05.410 And really the key here is do they have perseveration if you ask what year? Is it and they say 2019 and you say? What state

are we in and they say 2019 and you say well? Where are we and they say 2019 that is an attention because they cannot shift attention. So I kind of think of it hierarchically if I already have obvious perseveration before I get to my sustained attention task. I don't do this sustained attention task. Once you have one of those 3. You are already ruled in for having attention. I don't like the word intention.

NOTE Confidence: 0.863892436027527

00:28:05.410 --> 00:28:36.360 I like the word dis attention, but that is not an argument that's not a fight that I will take to my help. I'm going to die on because the field, loves in attention. But I in the prefix means without so dis attention would be more accurate. Awareness is reduced so awareness is the qualitative clarity of some sort and since Aureum is the sum. The integrated whole of your tthen Serie experiences. It is either clear or clouded or somewhere in between.

NOTE Confidence: 0.908126294612885

00:28:36.360 --> 00:28:55.430 Think about it is being clouded or clear. I like the word. But cloud that's a fun term, but but somewhere on that spectrum and it's a qualitative assessment. Now it's been operationalized in different ways, but admittedly there's a great deal of subjectivity to it are they able to give you a good story. First, you can make it story.

NOTE Confidence: 0.932806432247162

00:28:55.990 --> 00:29:01.160 That's probably because they have clouding of their sensorial.

NOTE Confidence: 0.884878158569336

00:29:01.660 --> 00:29:18.920 And then another and in fact that's what the DSM says do some 5 another cause of disturbance so In addition to reduce attention because that is a cognitive disturbance. It can be major disorientation executive dysfunction visual spatial changes or perceptual changes any of those would.

NOTE Confidence: 0.888411223888397

00:29:19.440 --> 00:29:30.650 Be would qualify for that and then finally we can specify the DSM 5. Arousal disturbances and so this is the quantitative level of Arousal, the hyperactive hypoactive.

NOTE Confidence: 0.885508239269257

00:29:31.270 --> 00:29:42.990 Normal active or mixed level of activity, although normal active is not in the DSM but interesting research on that recently at a Vanderbilt and potential prognostic significance of that.

NOTE Confidence: 0.871455490589142

00:29:43.490 --> 00:30:13.660 So the Cam you often hear the Cam already mentioned the camera. Cam stands for confusion assessment method. This is the

one this is the scale that they use in the research in the literature about 80% of studies statistic. I've heard in the past use the Cam or base delirium outcomes and delirious kind of caseness using the Cam and so it has 3 different parts. The cute change Inman Tation. Let's reduced attention, plus either disorganized, thinking or a change in Arousal.

NOTE Confidence: 0.903187155723572

00:30:13.660 --> 00:30:38.510 The change in Arousal was included to be inclusive so if a person if they were so sleepy that you couldn't engage them enough to actually assess whether they had disorganized thinking sharing in a way did not want to miss those patients and so she included this is a little bit more inclusive sense of who would meet criteria and then if you have those 3 delirium.

NOTE Confidence: 0.844941258430481

00:30:40.380 --> 00:30:47.490 There are many subtypes of the delirium. I'm sorry Cam assessment method the confusion assessment method they?

NOTE Confidence: 0.886443316936493

00:30:48.330 --> 00:31:00.350 I'm just going to point out here if you're talking about the short or long form. Can the short form. Cam is the four four item assessment that I just showed on the previous slide with one two, three equals delirium.

NOTE Confidence: 0.897319674491882

00:31:01.670 --> 00:31:32.460 You do if you're using that one or the long form, which includes other features like sleep wake. Disturbances perceptual disturbances. And so forth. You do need to standardize the cognitive assessment. It was originally validated using the mini mental it's been valid and I believe using the Blessed Cognitive scale and in a few others, but you do need to really be clear about what the cognitive assessment is that you're using for valid as a reliability. I should say the 3:00 the 3D camera 3 minute diagnostic am actually has.

NOTE Confidence: 0.860922694206238

00:31:32.460 --> 00:31:40.960 A set cognitive evaluation on the form so if you do a 3D Cam. You know what you're doing the same thing with the Cam ICU in the B Cam.

NOTE Confidence: 0.952811658382416

00:31:41.630 --> 00:31:42.930 They also have.

NOTE Confidence: 0.895183503627777

00:31:43.780 --> 00:31:56.280 Specified questions and tasks to do and I will say that at least the first three all have severity instruments that have been validated based on outcomes and so forth.

NOTE Confidence: 0.893571615219116

00:31:57.890 --> 00:32:29.740 There are many other instruments. We won't talk about them, but I'm just letting you know that there are many other instruments out there that have been described you really need to know the big point here is if you're going to look at research on delirium. You really want to make sure that the instrument. That's being used has been validated in the population that it's being used in in that research is not been valid in that population don't believe it if you saw Kim I see you study and I will say General Internal Medison and there are only using the Cam ICU I would.

NOTE Confidence: 0.866170108318329

00:32:29.740 --> 00:32:46.610 That should raise eyebrows busy can I see used for patients originally designed people into baited who couldn't speak those little purpose of it. So it's likely not going to be a sensitive so you really need to be careful about what exactly the setting is whether it applies so.

NOTE Confidence: 0.931090414524078

00:32:47.540 --> 00:32:49.650 In terms of neurophysiology.

NOTE Confidence: 0.921484410762787

00:32:50.270 --> 00:32:59.710 There are so many biomarker studies for delirium delirium risk that I'm not going to get into it. They vary all over the place because they are sampling different.

NOTE Confidence: 0.926155090332031

00:33:00.270 --> 00:33:15.220 They're looking at different populations and so I'm only going to mention here that it's an open area of inquiry. It is an area that we really need to become more sophisticated on I think this is going to hold promise for next.

NOTE Confidence: 0.892315983772278

00:33:15.760 --> 00:33:21.420 Stages in both research and also clinical care, but for what it's worth.

NOTE Confidence: 0.891295909881592

00:33:22.060 --> 00:33:49.740 There's not a lot here that is immediately relevant to clinical care, which is why won't spend as much time on it. Imaging studies and learn more virtually unheard of functional imaging because as you guess did they aren't going to attend long enough to stay still and if you sedated them? Well, then are you getting the functional image. Ng changes related to the sedation just gave him or the delirium. It's a tough one So what it's worth. This is an area of active inquiry.

NOTE Confidence: 0.885559380054474

00:33:50.850 --> 00:34:22.200 And then finally delirium precipitants. There are many precipitants out there, I think the longest one I've seen end acute brain failure. Now, Doctor Maldonado's most recently, I've seen that's fairly long. I like I watch death one because it speaks of the prognostic significance of delirium. This is kind of been one of the Standard acronyms I've changed a few of these the 2:00 that I really changed here is inflammation. Instead of infection because broadly it includes postinfectious and auto.

NOTE Confidence: 0.874056816101074

00:34:22.200 --> 00:34:38.450 Immune cases and I will give you a hand out on this as well. That actually unpacks each of these and then he would've logic there. Just a number of reasons why you might be delirious. Humid logically I put heavy metals. I move that under toxins because I mean?

NOTE Confidence: 0.861697494983673

00:34:39.800 --> 00:34:45.610 Broadheads and purposes of heavy metals are causing delirium their thoughts and so it seemed appropriate to put them there.

NOTE Confidence: 0.882553160190582

00:34:46.470 --> 00:35:16.580 I've also taken some Liberty inputing sleeping ambulation under deficiencies. I acknowledge that there's not a formal deficiency. But if you have profound sleep disruption or if you're not walking. I've joked many times by the way, saying there is no case report yet of walking patients. So much that they got Rahab Doe in the hospital and that would be a good case report to put in you know, I want to be the first you cannot walk a person enough.

NOTE Confidence: 0.914504408836365

00:35:16.580 --> 00:35:28.820 And get them active during the day and hasn't been reported don't expect that it will be. I'm being facetious with that. But it's only to reinforce the fact that it's important to be moving and up and up right.

NOTE Confidence: 0.907012462615967

00:35:30.010 --> 00:35:47.250 All right what do we do about it so the lyrium. We know it's a bad thing. We know it matters. We know it's a pretty complicated thing that we've tried to do some work in clarifying the nomenclature so broadly delirium disorder delirium and then psychiatric features of delirium.

NOTE Confidence: 0.876894950866699

00:35:47.870 --> 00:35:52.310 So getting into kind of what do we do about it. This is going to be our again this is our lens.

NOTE Confidence: 0.860007524490356

00:35:53.150 --> 00:36:24.000 Starting with pro cognitive factors, ideally predict and prevent it in each of these are little different predictions and Prevention. So

first off predicting it universe universal reset. Let me try that again. Universal risk factors include advanced age, cognitive impairment functional impairment on things like on the lot and I ADL functional impairment like I adls and adls broadly multi morbidity illness pharmacy and Frailty, which there are 2 constructs of that in the literature right now.

NOTE Confidence: 0.920254230499268

00:36:24.000 --> 00:36:32.260 But anyway, these broadly if you have any of these in increasing degree you are at increased risk for delirium.

NOTE Confidence: 0.899973809719086

00:36:33.470 --> 00:36:38.210 And in terms of preventing it. I just want to highlight the help model of the hospital elder life.

NOTE Confidence: 0.885023355484009

00:36:38.720 --> 00:37:09.570 Program model, it there was a recent meta analysis actually looking at this, but just broadly. What is it so their core interventions. Then there's broader program interventions, but the core interventions are 3 highlighters sleep enhancement early mobilization and vision and hearing protocols. I mean in truth, this is good care, we should be doing this for all patients not just to air quotes prevent delirium. We should be doing it because. Hey, the patient can't hear they can't see again. It's just not very nice.

NOTE Confidence: 0.894527912139893

00:37:09.570 --> 00:37:39.810 So so I think humanistic care calls for appropriate and you guys know if you know when you're on call and you get woken up you're not a happy person right. I'm not. I'll speak for myself. I get interrupted for any number of reasons. That's just not good so sleep in an spent getting up and out of bed and making sure that people can hear and see. These all make good sense and so they deserve widespread implementation period.

NOTE Confidence: 0.889520406723022

00:37:41.010 --> 00:38:11.420 But in terms of the effectiveness. There was a review just just last year and AJ GP which is the American Journal injured psychiatry and the effectiveness. It lowers the delirium incidents odds odds ratio about .47 lower risk of falls statistically speaking across the studies trend or do something just a trend toward preventing institutionalization on discharge so better outcomes in terms of dyspo location and then cost savings.

NOTE Confidence: 0.907584249973297

00:38:11.420 --> 00:38:28.240 Based on the 9:00 studies that looked at cost savings. You save real money so again this kind of model should kind of broadly be rolled out to hospital settings. It has really good data across the publications in terms of outcomes.

NOTE Confidence: 0.821270763874054

00:38:29.370 --> 00:38:38.140 Other ways of preventing it. There are other delirium bundles is very often with their called the A2F bundle for the ICU at Vanderbilt.

NOTE Confidence: 0.917466104030609

00:38:39.130 --> 00:39:09.340 Is commonly used it's kinda help type thing but each of the letters refers to different things in terms of spontaneous breathing trials delirium monitoring and so forth and then multicomponent nonpharmacologic interventions. The consensus is that they generally prevent about 30 to 40% of delirium. That's just a general rough number that you will see quoted in the literature and they do. They really do prevent about 1/3 of delirium, especially in high risk.

NOTE Confidence: 0.88368809223175

00:39:09.340 --> 00:39:28.770 Groups it's not clear yet, though whether they hastened delirium resolution. It's no good data to suggest if you do multi component nonfarm interventions that you will make delirium get over faster, which is which is significant. It's not that they don't. It's just the data aren't aren't there yet.

NOTE Confidence: 0.891866505146027

00:39:29.740 --> 00:40:01.300 Terms in a psychotic, they may prevent delirium in high risk populations, but really they're not ready for prime time. No ones out there advocating for brods broad brush use psychotics prevent delirium and Melaten Ergic. Their promising but there's limited evidence to date lot of people talk about the hot tub study with ramelteon lot of people. Just don't really believe that and there are a number of ongoing studies looking at melatonin ramelteon their mixed data right now, so there's not really a good consensus.

NOTE Confidence: 0.742844045162201

00:40:01.300 --> 00:40:01.930 Right yeah.

NOTE Confidence: 0.876732468605042

00:40:03.850 --> 00:40:10.080 And one point about melatonin. It is not a sleep aid. It is a chronic biotic and it only shift process see.

NOTE Confidence: 0.912784695625305

00:40:10.680 --> 00:40:41.950 The doses were using at 3 MG 2 milligrams 6 milligrams 9 milligrams. I usually go that high. It is it really just changes the curve that changes your endogenous circadian phase so if you look at it here. This arrow here give melatonin before 1:00 AM. It causes an advance but if you give it after 1:00 AM and it will cause a delay and very often.

NOTE Confidence: 0.895614445209503

00:40:41.950 --> 00:40:46.540 We in order to consolidate the sleep cycle and.

NOTE Confidence: 0.908271431922913

00:40:47.380 --> 00:41:19.430 The circadian phase general the recommendation is not give it QHS, but actually you get a little bit more pronounced effect if you're giving it. Perhaps I don't know if our mouse is working here, but effectively if you're giving it at the peak of the blue on the left so if you're giving it closer to 7:00 PM or so 6:00 to 7:00 PM. You get the greatest phase advanced and perhaps help to consolidate the process. See and process S kind of coherent. Lee speaking light could also be using I've actually thought that we should be.

NOTE Confidence: 0.890392899513245

00:41:19.430 --> 00:41:28.440 Thinking a little bit more about light therapy. Or maybe in blue blocking glasses, but that's kind of an open an open area of.

NOTE Confidence: 0.845769226551056

00:41:29.300 --> 00:41:40.550 Alright so that's preventing in preventing and I'm sorry predicting and preventing next you can identify and treat delivering precipitants. There are many of those.

NOTE Confidence: 0.914746046066284

00:41:41.120 --> 00:42:11.970 Again, we've already talked about delirium is multi determine there are a lot of factors that kind of conspired together. We already reviewed. I watch death. The acronym for ranges types of causes often kind of goals. Find the primary cause. But the fact of the matter is virtually every study that's looked at causes confined multiple contributors in most instances, there multiple things you can tweak in terms of potential contributors to delirium. We have an initiative right now at the University of Rochester.

NOTE Confidence: 0.863684058189392

00:42:11.970 --> 00:42:35.430 Live bar and live bars for nursing. We want to get nursing kind of in the driver seat for looking for things that can be changed. So you talk about S bar in nursing circles and so live. Bowman also, if you're alive bar and drinking alcohol, you get delirious or if you have a lot of alcohol for long periods of time, then stop you can get delirious so light bar you multiple applications delirium so.

NOTE Confidence: 0.901417195796967

00:42:36.480 --> 00:43:06.960 Question is, do they have lines that can be removed or tethers that can be removed are they intake? Is there in take appropriate very often like 2 days down the road before the primary team realizes they haven't eaten anything 'cause. They don't go in regularly enough to know whether they're eating or drinking taking in fluids right so again are they eating or drinking appropriately and getting that message to the primary team sooner so that we can really engage the patient more assertively in that in terms of intake vitals or their substantial changes in vital.

NOTE Confidence: 0.886419713497162

00:43:06.960 --> 00:43:20.860 Recently, in concert with recent confusion changing mentation is there evidence of a localising cause. So is there a urine. Now all the sudden cloudy and you know really just.

NOTE Confidence: 0.905297100543976

00:43:21.750 --> 00:43:51.940 Changed in some character and maybe the patients reporting burning when they pee or do they have a rash that looks like it's getting infected and it's a pretty or they have a Dick you desol sort. It's looking at some purulent drainage right. Those are things that we should be aware of and the nurse would be doing hands-on care would be able to point out and help bring attention to these specific behaviors that compromise care or not adherents ambulation of getting up do they need a PT console?

NOTE Confidence: 0.903587460517883

00:43:51.940 --> 00:43:54.040 Is there a mobile list of available?

NOTE Confidence: 0.889700889587402

00:43:54.660 --> 00:44:23.660 And then finally either retaining urine or stool. I mentioned Sisto cerebral centered earlier, but I have a sense clinically as well is not well defined in the literature have a sense, though, if you have substantial Constipation or obstipation that would be another reason based on the sympathetic activity sent up a Farrant Lee to the brain could cause confusion and so again do they need a bladder scan are they retaining or do they need something to help with their stool?

NOTE Confidence: 0.890925705432892

00:44:24.860 --> 00:44:55.810 Alright next, they have the syndrome, they have delirium you get to manage the syndrome so the first line is nonfarm approaches keep doing all the prevention interventions as you were doing, but now they're kind of secondary and tertiary, but you were doing it primary prevention. Initially, now you're thinking secondary in tertiary prevention. I like that a dot approach. This is by Doctor Flarity tolerate certain behaviors that are not dangerous. You just realize they're not thinking clearly anticipate so if.

NOTE Confidence: 0.824478685855865

00:44:55.810 --> 00:44:57.530 Their combat if don't.

NOTE Confidence: 0.917826235294342

00:44:58.320 --> 00:45:05.170 Don't get in their personal space quickly don't do quick movements they might be reflexively swatting at you.

NOTE Confidence: 0.893048465251923

00:45:05.820 --> 00:45:37.230 Anticipate that or anticipate that they might try to get up and so put a bed alarm on and make sure that they're not getting

up and at increased risk of falls and create boundaries. There don't agitate if they're getting kind of restless and kind of becoming more activated DD escalate turn the lights a little bit lower. Maybe don't go in there as frequently close the door. So there's not a lot of overstimulate overstimulation. If you will, for titrate stimulation to the patient and then.

NOTE Confidence: 0.899820029735565

00:45:37.230 --> 00:46:06.170 Finally, ambulate emulate inability to emulate emulate. I like the delirium. Toolbox here as well. It's actually physical tool box and you put different things in it, and you can actually have these things available, so pocket amplifiers. Readers magnifying glasses for columnist puzzles. Clay large print word searches sleep promotion. Having these things available, so again and be creative are hospital has something like this right now in the Ed But.

NOTE Confidence: 0.914797306060791

00:46:06.880 --> 00:46:24.480 But yeah, so the delirium toolbox is something that nurses and techs and other people in the floor. Physical therapists if they're working with the patient and they notice certain issues. Occupational therapist working patient notice issues that they can be engaged again really, really bringing them into their daily routine.

NOTE Confidence: 0.893140316009521

00:46:25.330 --> 00:46:56.250 Address polypharmacy clean up the medlist get rid of the extra anticholinergics like riding the whole bunch out there that you probably just need to be aware of in terms of potential offender sedatives. Can we limit those do they need them. Other offending agents like cipro? Can cause delirium beers criteria be mindful of these these are potentially inappropriate medications in older adults. They revise the list commonly. I do have an asterisk go on Poly Farmers 2 recent D prescribing studies.

NOTE Confidence: 0.909675419330597

00:46:56.250 --> 00:47:13.400 Bob Aran Campbell and both of which I believe were negative. They didn't really show an improvement in delirium outcomes. It's a question about whether perhaps they were sensitive enough or what have you but but it is something that should be done because if in fact if in fact?

NOTE Confidence: 0.893764793872833

00:47:14.070 --> 00:47:25.650 Some of these offenders are contributing to delirium. Then you should definitely always take the always always make time to clean up the Medlist That's important.

NOTE Confidence: 0.857998967170715

00:47:26.400 --> 00:47:36.130 And then managing the syndrome. Anna psychotics tend to kind of be the go to for agitation. But I'm going to make a couple of comments about them. 1.

NOTE Confidence: 0.899115979671478

00:47:36.880 --> 00:48:08.450 The presumption that NS psychotics because they're anti psychotics treat every kind of psychosis is unfounded. I mean, they just do not treat every kind of psychotic or hallucinatory or mis founded belief type symptom across the board. There's no reason to believe that they would I mean, they don't treat disassociative hallucinations, they're not formally going to treat Charles Bonnet syndrome. I mean that's just they're not like like the idea that they're going to fundamentally fix.

NOTE Confidence: 0.910875737667084

00:48:08.450 --> 00:48:42.460 These kinds of release release hallucinations, or disoss across the board is unfounded. Now, maybe they improve them through other means or by modifying or modulating the affective valence, but for what it's worth again. It's just not yet demonstrated convincingly that they are broadly antipsychotic in every context. There's no psychotic that's FDA approved for delirium or its symptoms and there is a black box warning for increased mortality in elderly patients with dementia related psychosis, so again.

NOTE Confidence: 0.913847267627716

00:48:42.460 --> 00:49:10.750 The concerns are real that was there largely because they were being used indiscriminately in nursing home populations. And so the data out there remain a little unsettled in the sense of whether this is a confounding by indication or to what extent they may be mechanistically linked with the bad outcomes, but there enough data out there to be at least circumspect and to be very cautious about it. They're not a panacea to be sure.

NOTE Confidence: 0.928447306156158

00:49:11.960 --> 00:49:25.260 Generally speaking, my recommendation and this is in line with a broad consensus in the community that I'm aware of antipsychotics should be restricted to treating agitation or psychosis that is severe.

NOTE Confidence: 0.910667300224304

00:49:26.090 --> 00:49:32.560 Dangerous or significantly distressing and I should add in in parentheses to the patient.

NOTE Confidence: 0.916145980358124

00:49:33.140 --> 00:49:59.710 If it is distressing to you, you get that psychotic, not the patient. The patient needs to be distressed by it. Now, if you put other people in danger. Now yes that would be an issue right and so we need to be very careful nonfarm approaches or always first line but we really need to be cautious in terms of just giving patients then I got any psychotic, thinking that they're going to really help the situation problem is the data aren't very good about them, either.

NOTE Confidence: 0.538068413734436

00:50:00.540 --> 00:50:01.160 So.

NOTE Confidence: 0.848086535930634

00:50:01.940 --> 00:50:05.610 In terms of the RC TS with NS psychotics that are placebo controlled.

NOTE Confidence: 0.856167078018188

00:50:06.410 --> 00:50:36.900 There were 2 studies in the literature, both very small looking at but I a pain in both are positive. Interestingly, one reduction in the DRF and then time the first resolution. Both of them were positive and they're very small studies 42 and 36 patients, but there are 2 positive RC TS with, but I pee in the literature using it for delirium. However, all the rest are negative so ICU delirium haloperidol page 2013, potted care delirium, which was a pretty.

NOTE Confidence: 0.878884613513947

00:50:36.900 --> 00:50:53.500 Talked about study auger 2017 haloperidol risperidone versus placebo. In fact, the patients who got the agents might have had worse survival. A lot of discussion about that ICU delirium. Both Gerards early publication of 2010 and more recently in the New England Journal.

NOTE Confidence: 0.915314972400665

00:50:54.140 --> 00:50:55.380 Negative now.

NOTE Confidence: 0.928165853023529

00:50:56.370 --> 00:51:26.450 One note at least with the Gerard study in the New England Journal about 90% of patients who are enrolled in the study were hypoactive and so broadly speaking you're really not. This is the ecological validity that we would be hoping for specifically. Notably, though they did right in response to letter to the editor recently that think about 1/3 of the patient had hyperactive features at some point in the study. Mozilla 3rd so fill 2/3 of the patients were.

NOTE Confidence: 0.923145890235901

00:51:26.450 --> 00:51:49.290 Always or only hypoactive and so the degree to which we might use that as the metric for affective. Ness or efficacy. I think it's still unsettled. I think we need better data and there are ongoing studies and just to say we need to be a bit more intellectually humble with the data that we have and not really think that we're fixing everything.

NOTE Confidence: 0.70617938041687

00:51:49.920 --> 00:51:51.010 With antipsychotic.

NOTE Confidence: 0.892110586166382

00:51:51.640 --> 00:51:56.860 There are a few other RCT's looking to treat delirium relative to placebo.

NOTE Confidence: 0.848130345344543

00:51:57.460 --> 00:52:12.950 If you used X Meta Talmidim. It looks like it is good in terms of managing agitated. ICU delirium so debts. Matama Dean has a pretty positive future bright future terms of delirium management agitated delirium.

NOTE Confidence: 0.833839654922485

00:52:13.930 --> 00:52:44.870 You'll see in a moment here, but basically adjunctive low. Raza Pam 3 milligrams to benzo naive people caused sleep a sedative causes sedation so that it was positive than 8 hours study. There was a study looking at adjunctive astic mean to help her at all very negative. They stopped it early because people are dying who got this now, it was assertively dosed. It was like 2 or 3 times. The upper limit of kind of therapeutic dose, so but no one's touching that with the 33.

NOTE Confidence: 0.886712491512299

00:52:44.870 --> 00:53:14.680 I have to pull because patients died in this study, and so it's not really where our emphasis is although ristic mean may have a future. We just don't know is not recommended, obviously in view. This outcome, and then there was a recent study in Norway. That was halted because of slow recruitment looking at Pio quantity in older really sick. Geriatric delirium, but again, it was halted early and so the power was not adequate.

NOTE Confidence: 0.913887202739716

00:53:15.290 --> 00:53:37.440 Didn't show it was called lucid study if I remember correctly and I want to be very clear that this agitated delirium study was 8 hours. We really don't know the longer term outcomes of giving a walloping dose of 3 milligrams of the Raza Pam whether they might have some rebound afterward or whether what other outcomes might be associated with it.

NOTE Confidence: 0.914376974105835

00:53:38.170 --> 00:54:09.680 Anyway so some practical options and managing the psychiatric syndrome. The psychiatric symptoms of the syndrome velarium, so if you're agitated or activated neuroleptics again tend still to be the one that people reach for now. I always need to say the absence of clear evidence of Efficacy is not evidence of the absence of Efficacy. Just 'cause there's not a study that says it doesn't mean that they don't work, and there is international literature.

NOTE Confidence: 0.892117440700531

00:54:09.680 --> 00:54:39.730 Of that that that suggests that it's efficacious that was a recent review in psychosomatic that I remember included a study. I believe from China, which looked at olanzapine relative to placebo and it was good, but but but again, the data. Just aren't quite conclusive. Yet make it that make that statement. 'cause I think that's a fair statement. Other considerations

again. None of these is really other than dex media comedy. None of these is really based on good.

NOTE Confidence: 0.84867125749588

00:54:39.730 --> 00:54:52.890 RCT data but valproic acid. There are case series of that, notably can't do Ivy push a valproic acid. You do have to hang it. It's like 30 minutes to 60 minutes to actually infuse it if you're giving an Ivy.

NOTE Confidence: 0.894988775253296

00:54:53.610 --> 00:55:24.070 Clonidine based on the data from Desmet Omidian Alpha 2 agonist. Trazedone Murtaz, Appin, based on kind of some use in behavioral and psychological symptoms of dementia be PSD data so that that has been considered and tried inpatient benzos. Obviously, if you're going to use them with caution typically their effectiveness or efficacy would likely just be limited to its sedative effects rather than it's not going to clear their centaurian, but it might.

NOTE Confidence: 0.8415407538414

00:55:24.070 --> 00:55:32.730 Help if you're going to give it ideally with an NS psychotic for synergy might help again with sedation if acutely needed.

NOTE Confidence: 0.850712478160858

00:55:33.950 --> 00:56:04.180 Melatonin I recommend giving the evening, not in QHS and then ramelteon. Question mark no treatment studies with meltdown again that hot test that he was a prevention study of geriatric delirium. If somebody is inanition tribula. I'm not uncommonly will consider a stimulant Modafinil. Armodafinil or something like that to wake them up to get them to engage other not eating. You can't give him because I'm not eating well. If they're not if they're if they're disengaged it could just be that ideas are disengaged and have the energycap I've seen many people start.

NOTE Confidence: 0.906695783138275

00:56:04.180 --> 00:56:05.220 Eating again.

NOTE Confidence: 0.90344625711441

00:56:06.050 --> 00:56:26.840 With a stimulant and so considering low dose. Be careful if they have obviously of psychotic symptoms. Very cautious about that. I'm not saying that there are good day to you know, obviously supported but clinically. I know this is a practice and you might actually get to kind of jump start their engagement and care and if that occurs then that could be a valuable outcome in and of itself.

NOTE Confidence: 0.918038308620453

00:56:28.080 --> 00:56:34.740 I like therapy another cuando therapeutic interventions kind of question mark, I can be fascinating studies to do.

NOTE Confidence: 0.862661898136139

00:56:35.410 --> 00:56:51.360 Restlessness and akathisia we don't often think about this, I mean. People just other wandering they want. They want to get out of bed. I wouldn't get out of that and if I'd acted thi. I would really want to get into vet think about Acca Thesia in your patient who just constantly wants to wander.

NOTE Confidence: 0.891944408416748

00:56:51.960 --> 00:57:15.380 They might not be able to tell you, Hey, Doc. It feels like. I have a motor and I need to keep moving they might have applied infective activities without the internal awareness of it is called Pseudo. Acca Thesia and that's still responds to akathisia treatments. So you could think about gabapentin or pregablin, notably they're both really cleared exclusively so if the kidneys aren't working cautious.

NOTE Confidence: 0.859499633312225

00:57:17.570 --> 00:57:37.800 Beta and by the way pre. Gablin has good data in it's not FDA approved for anxiety. But it does have RCT evidence in support of its use for JD so is it proved internationally for JD and reasonable effect size, so these agents Alpha 2. Delta ligands may have some anti anxiety effect as well.

NOTE Confidence: 0.794570922851563

00:57:38.340 --> 00:57:41.680 Beta blocker and benzos again as always.

NOTE Confidence: 0.755486845970154

00:57:42.270 --> 00:57:43.540 With caution at least in this instance.

NOTE Confidence: 0.882238328456879

00:57:44.670 --> 00:57:55.000 All right and then additional considerations. If you run a broaden your horizons and think about other options. So first off what, if they have obstructive sleep apnea or in the DSM obstructive sleep apnea. Hypotony's syndrome.

NOTE Confidence: 0.848907709121704

00:57:55.520 --> 00:58:28.290 Well see Pap Bipap, you could do an oxygen D Saturation Index at night. Poor man's sleep study. But you could do that respiratory text will very often be able to do it and give you a print out the seven page print out or give you the ODINE way to give you a sense of how much their desatting overnight. You could try positional therapy. So very often, obviously that back up Gladys for Gladys just kind of close up and join your side, it's less likely that those obstructive events.

NOTE Confidence: 0.79235315322876

00:58:28.290 --> 00:58:30.340 Will happen there very insulting they open?

NOTE Confidence: 0.852962076663971

00:58:31.490 --> 00:58:52.650 That'll orama daffodil during the day to try to help engage them because very often obstructive sleep apnea is not managed will kind of Kindle. The delirium and the confusion very often in the morning. Then you try to wake up. They go to sleep and wake up and go to sleep wake up and go to sleep. Four five times do like yeah, they probably have obstructive sleep and we should really think about that.

NOTE Confidence: 0.894298434257507

00:58:53.150 --> 00:59:24.170 OK, Catatonia as I mentioned earlier. I say if you have delirium an Catatonia. You should use benzos and I say this somewhat in jest, but I kind of mean it with impunity. Just do it. I mean, really if they have catatonic features in virtually any circumstance unless there is some compelling reason not to do so like maybe there aren't high dose opioids and you're worried about respiratory suppression. Understandably, right don't don't throw out your clinical a hat, but a dose of add event.

NOTE Confidence: 0.918698847293854

00:59:24.170 --> 00:59:49.170 I've seen really improve catatonic features even in the context of delirium in the context of failure to thrive when you're really not sure what's going on with the case series. Not too long ago, looking at not publish it was a poster on it, but look at ECT in patients who have Catatonia and confusion or delirium. Some people got a lot better with that so.

NOTE Confidence: 0.876907348632813

00:59:49.690 --> 01:00:04.110 Just be thinking broadly. Catatonia obviously glutamate antagonists any epileptic medications might also be considered an ECT there should be on the differential in the back of your mind.

NOTE Confidence: 0.893899321556091

01:00:04.670 --> 01:00:30.840 And then other considerations valproic acid induced hyperammonemia give level carnitine choose you like 4 times a day 1000 milligrams 4 times a day or something in that range. The weight based dose. Ings largely in Pediatrics, from what I understand and that's kind of the dose, though, that we I've seen used to treat it ruling out benzos intoxication consider flumazenil obviously risk of seizures, but I have.

NOTE Confidence: 0.877090632915497

01:00:31.600 --> 01:00:56.290 Heard read authors who propose that ruling out or even treating anti connect city with Fiset Stig Mean Doctor Rosema's at the Academy. I know has been particularly interested in talking about that. Last couple of conferences and you haven't explained delirium and you've done. The Million dollar work up. You don't know what's going on and maybe you can't get an LP or really aren't quite sure.

NOTE Confidence: 0.893824756145477

01:00:56.860 --> 01:01:00.050 I have occasionally just recommended because.

NOTE Confidence: 0.933225691318512

01:01:00.610 --> 01:01:10.530 Talk about later today the idea of immune and stuff, allopathy, there a lot of things that we do not know and there is the possibility that they have kind of A.

NOTE Confidence: 0.925123155117035

01:01:11.220 --> 01:01:19.540 Negative panel, but they still respond to steroids so impulsive steroids might be considered in the appropriately selected clinical patient.

NOTE Confidence: 0.607465505599976

01:01:20.040 --> 01:01:21.120 And.

NOTE Confidence: 0.914467036724091

01:01:22.770 --> 01:01:54.280 And then ECT as well, and the person who has this chronic indolent delirium where nothing else is making sense. Maybe they have catatonic features. ECT has been tried in delirium. Not that it should be used regularly. But if you have have nothing else to consider but at least say keep it in the back of your mind and ask yourself. Whether there's any reason to believe that it might be valuable like maybe you think it's delirious mania, which is a catatonic spectrum illness or something like that ECT at least should be.

NOTE Confidence: 0.845937728881836

01:01:54.280 --> 01:02:12.580 In the back of your mind. You want answered questions does delirium exist. My answer is maybe delirium the air asterisk would be as we understand it. Currently, I think delirium as we understand it currently is a muddy construct.

NOTE Confidence: 0.915001153945923

01:02:13.140 --> 01:02:40.700 Should we be talking rather of Deliria or all deliria created equal is a one size fits all approach warranted or even sensible and my answer to that last one is no I don't think it's warranted. I don't think it's sensible. We really need to be more sophisticated and we need to be thinking about subtypes. And so this is where I'll get back into this middle piece right in the center of delirium here delivering disorder is the Physiology.

NOTE Confidence: 0.942215085029602

01:02:41.510 --> 01:02:46.600 And so this is something in that paper that I mentioned earlier that we have proposed.

NOTE Confidence: 0.93353670835495

01:02:47.570 --> 01:02:54.200 To think about prototypes specific neuro physiological disturbances in delirium.

NOTE Confidence: 0.93581360578537

01:02:54.760 --> 01:03:03.390 And on the far right column. There are theorized translation interventions that might be valuable to consider in these unique.

NOTE Confidence: 0.888234376907349

01:03:04.210 --> 01:03:23.010 Conditions you wouldn't give an anti-inflammatory steroid for instance, if they have a burning plastic encephalitis or an antibody associated encephalitis. You wouldn't throw give Astaire right there, but you wouldn't give a steroid to somebody. Let's say who is an alcohol withdrawal delirium.

NOTE Confidence: 0.929585874080658

01:03:23.620 --> 01:03:53.930 There's you have to be thinking about this kind of mechanistically and all I'm suggesting with this is when we do see patients. I want us to begin to think physiologically because if we're just looking at the phenotype. We're really going to be surface deep and ultimately I think the future of delirium research and clinical care would do well to consider to investigate to exhume a little bit more of the neuro physiological peace.

NOTE Confidence: 0.902699112892151

01:03:53.930 --> 01:04:08.750 So that we can begin to make rational subtypes of delirium that imply specific treatment approaches so that we can tailor treatment to those 2, those patients so.

NOTE Confidence: 0.848296165466309

01:04:09.600 --> 01:04:15.740 Again, something something to think think about so again. Why does it matter it's common overlook possibly distressing dangerous?

NOTE Confidence: 0.759012758731842

01:04:16.250 --> 01:04:17.120 In a bad omen.

NOTE Confidence: 0.851251900196075

01:04:17.730 --> 01:04:19.980 It is a disorder medical confusion.

NOTE Confidence: 0.877277195453644

01:04:20.670 --> 01:04:21.560 But it has.

NOTE Confidence: 0.869979441165924

01:04:22.060 --> 01:04:31.980 Cause and roofing theology and has specific clinical features is informed pretty strongly by certain pro cognitive factors or their deficiency.

NOTE Confidence: 0.881545603275299

01:04:32.490 --> 01:04:51.240 When we are managing it. I would say you know, we manage delirium while you treat the underlying cause that's only one part of it right so I would say predict and prevent it identify entreating precipitants manage the syndrome again. Those are all three distinct treatment approaches and then finally.

NOTE Confidence: 0.918946862220764

01:04:51.770 --> 01:05:00.300 Define entreat the neurophysiological subtypes of delirium insofar as you might be able to identify them politically in your patient.

NOTE Confidence: 0.875193417072296

01:05:01.870 --> 01:05:02.910 So with that.

NOTE Confidence: 0.839275300502777

01:05:03.660 --> 01:05:05.160 We're all set.

NOTE Confidence: 0.955987095832825

01:05:05.930 --> 01:05:07.020 Questions.

NOTE Confidence: 0.56650447845459

01:05:12.830 --> 01:05:13.210 Yeah.

NOTE Confidence: 0.863875269889832

01:05:13.750 --> 01:05:20.000 Using virtual reality for people who have you know?

NOTE Confidence: 0.777829766273499

01:05:20.810 --> 01:05:28.810 Like you mention other things to prevent you know it was mainly at least report or something.

NOTE Confidence: 0.846502602100372

01:05:29.700 --> 01:05:42.610 Yeah, a virtual virtual reality to use it to prevent delirium. Yeah, for some reason I remember seeing it talk on that the American Delirium Society last year, I mean, it's.

NOTE Confidence: 0.925669848918915

01:05:43.220 --> 01:05:48.540 I don't know I mean, there are a lot of things that are kind of on the on the horizon.

NOTE Confidence: 0.902091264724731

01:05:49.090 --> 01:06:04.310 If you could sure up some kind of cognitive capacity. Perhaps I guess the question would be can you do enough about lumosity lumosity? Is kind of OK these brain games?

NOTE Confidence: 0.933767437934875

01:06:04.900 --> 01:06:22.490 You know the question is how strong is the effect how much you actually changing the individuals capacity. That's an open question. I don't really know the fascinating idea but I don't know that there's anything coming down the pipe on that yet.

NOTE Confidence: 0.842632234096527

01:06:23.320 --> 01:06:24.450 Fascinating question now.