Brief biography of Dr. Veselis and Professor Wang

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BIOGRAPHY AND AREAS OF RESEARCH:

Dr. Veselis received his MD degree from the University of Toronto, anesthesia training at Duke University, North Carolina, and Critical Care Fellowship at University of Virginia, Charlottesville. Dr. Veselis has spent most of his career at MSKCC, developing a research program focused on mechanisms of the amnestic actions of anesthetic drugs, as investigated in healthy human volunteers. Recently Dr. Veselis has focused on more clinical aspects of cognition in the peri-operative period, including delirium, anesthesia related outcomes, pediatric sedation, and neuromonitoring. He is currently

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Michael Wang

TOPIC: Awake paralysis – the heart of AAGA PTSD

BIOGRAPHY AND AREAS OF RESEARCH:

Michael Wang is Emeritus Professor of Clinical Psychology in the

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Division of Clinical Psychology of the British Psychological

Society. He has worked as a clinical psychologist for more than

35 years, treating patients with PTSD, anxiety disorders, depression, obsessional compulsive disorder, and in particular, psychological problems arising from unplanned anesthetic and surgical incidents.

Anthony Messina, MD, MSPH, MBA is a retired Adjunct Professor of Healthcare Management at the Jindal School of Management, University of Texas at Dallas and anesthesiologist.

Manuscript of Interview

Michael Wang (MW): So, it's great to introduce Professor Bob Veselis from Sloan Kettering (0:18/16:31)

Robert A. Veselis (RV): Memorial Sloan Kettering (0:25/16:31)

MW: Memorial Sloan Kettering, hospital in New York City (0:26/16:31)

RV: Mmhmm.

MW: I'm Professor Mike Wang from University of Leicester, United Kingdom. So, the first question I wanted to ask you about was what is your definition of an adequate general anesthetic? (0:31/16:31)

RV: In terms of an adequate general anesthetic, I think probably the most important component is that of amnesia. I think most people undergoing anesthetic or most procedures, their preference is not to "remember a thing" during the procedure. So, I think amnesia is probably the most important component of an anesthetic. And explain my rationale for that? Anesthesia is comprised of multiple components as you know, treatment of pain, analgesia, unconsciousness, hypnosis, amnesia, memory, and lack of movement-- where the people use neuromuscular blocking agents or as more popularly called muscle relaxants as a means to prevent movement. Now the unfortunate part of anesthesia is that we really have no objective measures of all these different components. What we do have is clinical experience and our best guess as to what would be the best doses of anesthesia to use for each particular component based on our clinical experience and various studies and so on. The problem is, it's not 100%, and if there's some mishap with one of the components. In other words, not enough pain medication, not enough hypnosis, probably the best safeguard for a satisfactory anesthetic would be to have amnesia. So that's why I say amnesia is the most important component I think of the anesthetic experience. (0:45/16:31)

MW: Do you have any problem with the circumstance of a patient in pain and distress during an operation, during a procedure, but then subsequently to be amnesic? (2:41/16:31)

RV: Well that's if the patient for whatever reason is in that situation, I would certainly want them to be amnesic for it because I think the evidence shows that if you're not amnesic for it, that type of experience is very traumatic. However, if you have that situation and the patient doesn't remember, the degree of trauma is much less. I'm not sure that people have really demonstrated that there's significant negative outcomes in that situation. Now, obviously you want to avoid getting into that situation. So that's why I say you know anesthesia is multiple components and you have to give medications to treat each component. Now what we tend to do, is we tend to give large doses of medication to for each component and I'll use pain as an example. With the advent of Remifentanil, which is an extremely potent analgesic. We can massively overdose in the sense the medication to treat pain as it's happening, but it wears off very quickly and it has a high safety index. In other words, you can give a very large dose and not much negative happens in the setting of the anesthetic theater. So, in general what we do in clinical practice is to sort of tend to give more medication than may be necessary, because at the time we're not 100% sure whether we're targeting the effect that we want. (2:56/16:31)

MW: Okay, I don't want to put words in your mouth, but let me just try and summarize what you're saying so that I'm clarifying that I've fully understood what you're saying. So, it seems to me that you're saying that the most important thing is that the patient doesn't remember after its happened. The fact that some patient's might be in an extremely unhappy (that's a British understatement), an unhappy state intraoperatively and possibly in very severe pain, is from your perspective unfortunate and probably undesirable, but it's not the main point of a general anesthetic. From your point of view, the main point of a general anesthetic is amnesia postoperatively. Is that correct? (4:40/16:31)

RV: Not 100% correct (5:32/16:31)

MW: Okay, tell me where… (5:35/16:31)

RV: I agree with your statements of about unfortunate and you want to avoid those situations. The amnesia I think is important in the sense of a safeguard. If the amnesia is present that minimizes the negative consequences of such events. (5:36/16:31)

MW: But the starting…my starting question was, how would you define an adequate general anesthetic? And you responded by saying the key thing is amnesia. (5:53/16:31)

RV: Right, I...

MW: Are you still operating from that stance, or would you want to say for an adequate general anesthetic, you need to have a bit more than amnesia? (6:05/16:31)

RV: Well, I think yes. You have to have all the components of the anesthetic experience and they need to be balanced, but I think amnesia is the most important because it is sort of the backstop for negative consequences if the other components aren't quite right. (6:14/16:31)

MW: Would you have concerns if one of your trainees made it clear that they were targeting amnesia in terms of their titration of anesthetic agents, as opposed to any other variable? (6:33/16:31)

RV: I would encourage the trainee to be thinking of targeting amnesia, to always be thoughtful of that, but not at the exclusion of other components of the anesthetic. So, you have to always think of all of the other components: pain, hypnosis, and amnesia, and movement—muscle relaxants. (6:46/16:31)

MW: Sure, sure. But I'm sure you can see what I'm getting at here? (7:16/16:31)

RV: Right, right.

MW: What I think is a little bit ambiguous about your position is that it seems to me that you're almost saying that it's quite possible for a patient to be in a very unhappy state intraoperatively. That it's almost although undesirable, it's almost like that might happen—you might shrug your shoulders. But, as long as they are amnesic after the fact, it's okay, it's acceptable. Is that right, or am I putting words in your mouth? (7:21/16:31)

RV: Well I think it is more acceptable, than if they do remember. So once again, you know I emphasize that the amnesia is an important backstop for mishaps. Now we know anesthesia is a very complex operation. And you know I think in terms of awareness during anesthesia, people who have explicit recall of being awake and paralyzed during anesthesia. The thing I always like to emphasize with trainees and everyone else is, it's important to be aware of awareness. I think a lot of people forget about that when things happen, multiple events are going on, sort of the swiss cheese model of events that people forget about that. And I think it's important to train people to be aware of awareness. In other words, to realize that the patient has muscle relaxants on board when that is the case and that they need to be anesthetized, and not have adequate signs because the patient's not able to move. So, I think being aware of awareness goes a long way to deal with the problem. (7:56/16:31)

MW: So, what do you make of my position, which is that: the definition of an adequate anesthetic is one in which there is oblivion, complete and reliable intraoperative oblivion. Irrespective of amnesia postoperatively. And In fact, I would go further to state that it seems to me unethical to target amnesia if you know that a proportion of patients are going to experience distress and pain intraoperatively, but that it won't matter somehow because afterwards they'll have no memory of it? (9:20/16:31)

RV: Well I think targeting oblivion may seem like a good thing. That would, I think, in general require larger doses of anesthetics and there is some evidence that is still being worked out. Larger doses of anesthetics may be harmful in certain patient populations: in older patients, patients with some frailty before their surgery, in many more older patients undergoing surgery where we have an increase in this population. Now oblivion, is I think connotes a very deep level of anesthesia you may not necessarily need that for most patients. (10:04/16:41)

MW: Yeah, but I might argue that if you don't operate on that basis you are inevitably going to have a percentage of patients who are conscious intraoperatively, maybe without explicit recall but nevertheless conscious interoperatively, possibly in distress, and possibly in pain. And the argument I would put to you is that, if that is the target of as opposed to amnesia then it seems to be that's of much more ethical stance; and in relation to your point about overdosing, I think we heard yesterday that there is still little or no real hard evidence that overdosing is causing neurotoxicity. (11:01/16:31)

RV: Well, I agree that is still a question open to debate. I think also there's really little or no evidence that unrecalled consciousness or awareness during anesthesia. Though I don't like the term consciousness I much prefer the term responsiveness, that is not recalled. Also, there is really lack of

evidence of any negative outcome in that situation as well. So, you have two opposing sorts of parts of the scale. And I think many of the cases of awareness, where you're awake and paralyzed, are related to systems problems: people running out of anesthetic agent and vaporizer, people not being aware of awareness, people not being aware of muscle relaxant being on board, and so on. So, I think those systems problems are just as important to address as the issue of oblivion. (11:51/16:31)

MW: Okay, so let's cut to the chase to say. So, if you or a member of your family needed to have a surgery under general anesthetic, and you had a choice of two anesthetists: one of whom would always target amnesia, and one of whom would target oblivion. Which one would you choose? (13:03/16:31)

RV: I would choose the…well, when you mention the oblivion, that includes amnesia as well. (13:30/16:31)

MW: It does.

RV: Alright, so I would choose a person who is aware of the importance of amnesia. I would not choose an anesthetist who feels amnesia in the absence of any other modality is sufficient anesthesia. (13:40/16:31)

MW: Okay, so you would go for the oblivion targeting anesthesiologist. (14:00/16:31)

RV: Well, I would like to have somebody who is aware of the balancing act of anesthesia, between oblivion and awake recall, and that I don't wouldn't want somebody who's just going to be giving more anesthetic drug because they're not sure of what is happening with the patient, regardless of other information. L…You know, once again, the whole issue of whether there was a level of anesthesia that was harmful postoperatively in terms of cognitive function, arose from the fact of using a depth of anesthesia monitor in terms of trying to target a middle range of anesthesia, and as it turns out in the data analysis they found that patients at a deeper level of anesthesia had significantly higher morbidity afterwards, and that started the whole… (14:06/16:31)

MW: Yeah, but there's only…

RV: conversation.

MW: one study that's shown that, and the other point that I would make to you is that there've been these nice studies where there's been a comparison between regional anesthesia and general anesthesia with matched problems, surgical procedures, and so on has actually been no difference in POD (postoperative cognitive deficit) rates in the two groups. (15:18:/16:31)

RV: Right, well, but I would a bit disagree with the that there's only one study in terms of the deep anesthesia. There's been multiple studies that go back and forth, and currently underway there's a large study looking at whether… (15:43/16:31)

MW: We keep hearing about it, we never see any results, do we? (15:57/16:31)

RV: Well…it should be in the next year or so. It's a very large study, but I think that hopefully it will be definitive help answer some of these questions. For instance, if that study shows that there's no difference in the two outcomes then I would be certainly more in favor of oblivion, but until then I think one has to be cautious and making dogmatic statements; and until then I think amnesia is important because if for whatever reason there's some sort of mix up with drugs or the wrong drug is given. I

think it's much better situation where the patient doesn't remember than if they do recall. (16:00/16:31)

MW: Yeah.

Manuscript transcribed by Vanessa Soto; reviewed by MAW & AM; emailed to Dr Veselis on 11/21/17;