



Podcast Transcript: Prescribing for Older Veterans with PTSD

Hi, I'm Beth Cohen and I'm a primary care provider at San Francisco VA medical center, and an Assistant Professor of Medicine at the University of California – San Francisco.

And, it's a pleasure to be here today to talk with you about prescribing for older Veterans with PTSD. And, I have no financial disclosures related to this topic.

So, I wanted to start by showing a slide that highlights what some have termed the graying of the world population. General population growth, coupled with longer life expectancy, is leading to a rapid increase in the number of older people worldwide.

This figure shows the number of people over age 60 from 1950 projected through 2050. The light gray area on the bottom shows that, by 2050, over 1.5 billion people will be age 60-79, and the dark gray area shows that about half a billion people will be over 80 years old.

Similarly, we're also experiencing the aging of the Veteran population. Census statistics found there were 9.1 million Veterans, age 65 and older in the US in 2011. And, it's estimated that by 2020, approximately 50% of male Veterans will be 65 or older.

So, as we think about common health concerns in Veterans, such as Posttraumatic Stress Disorder, it's important to consider how age might affect their symptoms and treatment.

But, we run into some challenges because few epidemiologic studies have focused on PTSD in older adults. And, there's minimal longitudinal data about the effects of PTSD in this population.

In addition, as most medication trials exclude older adults, the evidence base to guide our prescribing is limited.

But, with those caveats in mind, there are some recommendations that can be made from existing studies and from clinical experience.

So, as an overview of what I'll discuss, I'd like to start by reviewing the studies that have examined the epidemiology of PTSD in older adults, to briefly discuss its presentation and time course.

Next, I'll talk about the intersection of cognitive impairment in PTSD and, specifically, describe some of the causes of cognitive impairment that may overlap with PTSD and how to differentiate them.

And then, finally, I'll spend the bulk of the time discussing best practices for pharmacotherapy for treatment of PTSD and comorbid problems, such as sleep or behavior problems that are common in older patients.

I'd like to start by reviewing the studies that have examined the epidemiology of PTSD in older adults, to briefly discuss its presentation and time course.

There are some studies that have focused on PTSD in older populations, and several studies that have been done in general populations, though not specifically military populations.

One study from the Netherlands found 1% of older adults surveyed met criteria for full PTSD, and 13% met criteria for sub-threshold PTSD.

Another study from Germany found that 3% of those age 65 and over had PTSD, and that this prevalence rate was similar to that in the younger population.

Of course, thinking about our patients that we see at the VA, we might expect prevalence rates to be higher in older Veterans. And, studies that have looked specifically at traumatized populations of older patients, and mostly these have focused on Holocaust survivors or prisoners of war, have found that the prevalence of PTSD is, as expected, much higher; in the range of about 25 to 50%. And, in some cases this was up to 40 years after the initial traumatic event.

However, other authors have advised caution when interpreting these data, and suggest that the true prevalence is likely even higher. And, this could be for several reasons.

First, there may be issues with under-reporting and stigma that are particularly relevant to older populations. The VA and military have gone to great efforts to educate returning Veterans about PTSD, and we now have universal screening for PTSD within the VA. But, of course, this wasn't the case when Veterans returned from WWII, Korea, and Vietnam.

In addition, other studies of older patients have found that they may attribute their PTSD symptoms to causes other than trauma. For example, they may attribute symptoms such as agitation or irritability to aging, or may associate symptoms with an illness that they have, and not recognize their connection to a traumatic event; particularly, one that might have occurred decades before.

As suggested from the study on the previous slide, there may also be a higher proportion who have sub-threshold PTSD symptoms, so that the smaller portion of patients meeting full diagnostic criteria for PTSD may just be the tip of the iceberg. And, there's a much larger group of patients that are experiencing lower level symptoms that may still be distressing. And, these patients may benefit from evaluation and treatment for PTSD.

Lastly, there's been some very interesting work examining how the presentation of PTSD is different in older vs. younger patients. And, these studies have demonstrated that older patients tend to present with increased somatic symptoms. So, they may complain of pain or problems with sleep and appetite. They may start to show neglect to hygiene or routine care. And, they may come in with a new functional impairment or behavioral changes.

And, given these types of symptoms, these patients may first present to primary care or urgent care providers, especially if they are not connecting the symptoms with a mental health issue. So, it's important for these providers to be alert to these types of changes or new symptoms in older Veterans, and to think about screening them for mental health problems.

Several studies have also examined the time course of PTSD in older adults. PTSD in this population may be new onset in response to a new traumatic event. And, there are several types of trauma that may become increasingly common with age, such as serious illness or the death of a loved one.

PTSD in older adults may also represent chronic symptoms from an earlier life trauma that were previously minimal, or well-controlled, and then re-emerged with age. And, I'll talk about why that might occur in a moment.

And lastly, there have been interesting cases observed of late onset, or very delayed presentations of PTSD, though some researchers have questioned whether this is true delay. So, someone experiencing their first

symptoms decades after an event, versus prior under-reporting, or a new exacerbation of what were previously sub-threshold symptoms.

So, next, I'll talk a bit more about the epidemiologic data we have describing each of these types of PTSD in older adults.

In terms of new onset PTSD, the question has been raised as to whether older adults would be more vulnerable to developing PTSD after a new trauma.

But actually, studies that have examined this found that the risk of new onset PTSD is similar, or in some cases even lower in older adults vs. younger individuals. And, these studies have largely been done in the setting of natural disasters, or interpersonal violence traumas.

These studies have also found that the risk factors for developing PTSD after a trauma are very similar in older and younger patients. So, patients with a history of childhood trauma, those who have lower self-efficacy or social support, and those with specific personality traits were more likely to develop PTSD after a new traumatic event.

Several studies have also examined the time course of chronic PTSD with aging. And, the figure on this slide is from the study of WWII and Korean War prisoners of war. The authors asked patients to retrospectively report the severity of their PTSD symptoms at various time points in their life.

And, looking to the left of the figure, you can see that symptoms were highest immediately following the trauma, so in the year after discharge. Then, they tend to decline over the next several decades and then, on average, increase later in life.

But, it's important to note that this figure represents the mean symptoms in this population, and it's actually comprised of several differing symptom trajectories. And, when the authors examined these trajectories, they found 28% of the patients had what they described as "re-emergence," where symptoms increased later in life.

Another study by Rachel Yehuda and colleagues that focused on Holocaust survivors looked at PTSD symptoms over a 10-year period, and showed that overall PTSD symptoms did decline, but again there were heterogeneous symptom trajectory patterns.

Lastly, focusing on late onset PTSD, there are several case reports and series of seemingly new PTSD occurring in Holocaust survivors and prisoners of war several decades after the traumatic event. And, in the study of POW's that I described on the last slide, 6% did appear to have late onset of PTSD symptoms.

There have also been some interesting triggers described in the case studies of late onset PTSD, and these include Alzheimer's disease, vascular events such as a stroke, and alcohol-related dementia. This has also been seen after non-neurologic medical problems, and in relation to age-related stressors, such as retirement or bereavement, though again there is some controversy about the entity of late onset PTSD.

So, why would PTSD worsen with aging? Well, one theory is that there is a disinhibition of neural pathways that make traumatic memories more prominent with age. Specifically, as cortical cells are lost in neurodegenerative processes underlying dementia, emotional memories, which are stored in other areas of the brain, become more prominent.

In addition, as patients' age, they may be more likely to be exposed to illness and medical facilities that could trigger reminders of prior trauma.

And, as I described earlier, there are common events such as surviving the death of a loved one that can be very traumatic for patients.

And lastly, developmentally appropriate reflection on life and meaning may increase peoples' focus on traumatic events that occurred earlier in their lives.

Again, cognitive decline and dementia may also play a role in the worsening of PTSD symptoms with age.

As I mentioned, traumatic memories may be more resistant. And, this is because traumatic memories, as well as long-term memories, are stored in the sub-cortical regions of the brain that may not be as vulnerable to neurodegenerative processes.

There have also been laboratory studies that have shown events, which occur in the setting of stress, are better encoded than those that occur in emotionally neutral settings.

In addition, there can be a loss of prior healthy coping mechanisms that may have previously helped people ameliorate their PTSD symptoms. And, there can be a loss of important structural elements in life, such as work, that also helped with symptoms.

And lastly, behavioral problems associated with neurologic diseases of aging may exacerbate some of the symptoms of PTSD. So, for example, paranoia that can occur with some forms of dementia, or aggressive behavior.

So, to summarize, based on the epidemiologic studies of PTSD in older adults, when we see a patient with PTSD, we have to consider whether it's new onset, an exacerbation of chronic symptoms, or whether it might be delayed onset from a remote trauma.

Aging itself is also associated with vulnerabilities and cognitive problems that can worsen PTSD symptoms.

And, finally, we need to be attentive to the fact that presenting symptoms may differ in older adults.

So, moving on to our next topic. We just discussed how cognitive impairment or dementia may worsen PTSD. How about the reverse; how does PTSD affect cognitive function?

Well, there have been several studies, many of them done in Veterans of prior wars that have found patients with PTSD have impairments in cognition compared to patients without PTSD. And, this is most notable in domains of attention and memory.

Most of these studies have been of older Veterans, and have been smaller in size; with sample sizes under 50. But, there have now been some larger studies done in younger populations of returning Veterans that have similar findings.

And, investigators have been able to correlate some of these deficits in cognitive testing with changes on neuroimaging. For example; decreased hippocampal volume seen in patients with PTSD correlate with memory problems. And, additional impairments have also been shown on functional MRI.

There has also been a large study that found PTSD was prospectively associated with an increased risk of dementia.

And, this study, by Kristine Yaffe and colleagues, used electronic medical records from 181,093 VA patients who were free of dementia diagnoses at baseline, and then were followed for 7 years to look for new diagnoses of dementia based on ICD-9 codes in the clinical record.

Looking at the figure from this paper, this shows the cumulative incidence of dementia over the follow-up period at various ages among those with PTSD in the dark line, and those without PTSD in the dotted line.

And, at about age 60, these curves start to diverge so that the patients with PTSD have a higher incidence of new dementia.

This is a table from the study showing hazard ratios for various types of dementia associated with PTSD. And, I want to focus your attention on the bottom row; which has been adjusted for various potential confounders and mediators, including demographics, medical comorbidities, depression, substance use, traumatic brain injury, and stroke.

Looking across this bottom row, you can see PTSD was associated with about two times the risk of dementia, independent of these other factors.

But, when you have a patient sitting in front of you with new cognitive symptoms, you have to think about a variety of potential causes, many of which may intersect or overlap with PTSD.

As we just discussed, there could be cognitive decline that's directly related to PTSD and other psychiatric disorders, such as depression, are also associated with cognitive impairment.

In an older population, we also have to consider dementia and other neurodegenerative conditions, as well as other medical illnesses, such as acute infection, that may present with cognitive problems.

And lastly, we'll talk more about this topic later; but, many of the medications we use in older adults can affect cognitive function.

So, in a given patient, how do you differentiate these many potential causes of cognitive impairment?

Most of the studies of PTSD that have used cognitive testing are cross-sectional, but longitudinal studies suggest that deficits would be slowly progressive, and that they may fluctuate in response to trauma-specific memories or the level of PTSD symptoms.

Cognitive impairment due to the most common forms of dementia or neurodegenerative diseases should also be a gradually worsening process. The exception would be dementia due to a vascular event or stroke, where a patient may have a dramatic change in cognitive function after the event.

But, for many dementia-related conditions, we would expect the patient to have other neurologic abnormalities that would not be present in PTSD. For example, disorders of movement that are seen in Parkinson's disease.

In addition, the deficits seen in PTSD are likely to be more minor compared with what we might expect in a progressive neurodegenerative disease, or in more severe cases of Alzheimer's dementia.

Thinking about a medical illness causing cognitive problems, this often presents with delirium. And, delirium has a very distinct entity that typically has a rapid onset within hours to days of the underlying medical problem. The hallmark of delirium is rapid fluctuations in consciousness, so a patient may go from agitated and confused to somnolent and difficult to arouse very quickly. And, we really wouldn't expect to see this with PTSD or some of the more common neurodegenerative diseases.

Delirium is also characterized by impaired attention and visual hallucinations.

Turning to medication side effects as a cause of cognitive impairment, these should also be relatively acute, and they should be associated with timing of the medication. For example, a new medication that was recently started, or a change in dose of a chronic medication.

So, in trying to differentiate these causes, obtaining collateral information from family members and caregivers can be incredibly helpful.

Conducting a thorough history and physical examination is very important, as well as obtaining a basic medical work up. For example, a complete blood count and metabolic panel could uncover an infection or an electrolyte imbalance that might be responsible.

Thyroid stimulating hormone and B12 levels are typically checked since thyroid disease and B12 deficiency are treatable causes of cognitive impairment.

So a urinalysis is done, as occult urinary infections can be common in elderly patients.

And, it's important to review the med list carefully, with particular attention to new medications, changes in dose, and over the counter medications that can cause cognitive problems.

So for example, antihistamines, such as Benadryl, which patients may take for sleep problems, are associated with a number of cognitive problems.

And, it's important to ask about, or consider laboratory screening for alcohol and illicit drug use. Patients may have had a previously well-controlled substance use problem, but as they age they may lose social supports or develop cognitive impairment that can cause these problems to re-emerge.

And finally, if the cause still remains unclear, head imaging or, in the case of delirium, an EEG may be obtained.

So to summarize, studies suggest PTSD increases the risk of cognitive impairment and dementia.

But, of course there are many other factors that can cause cognitive symptoms in older patients with PTSD.

So, taking a careful history and conducting a physical examination and laboratory work-up can help us differentiate these causes.

And now, I'd like to turn to best practices for pharmacotherapy in older patients with PTSD.

But first, I'd like to highlight the importance of non-pharmacologic therapy, or psychotherapy, in older patients with PTSD.

There have been some concerns raised about using psychotherapy in older patients, including their ability to participate, and to benefit from cognitive behavioral therapy. And, indeed, there was a small trial of 23 patients with PTSD, that found those with poorer verbal memory performance were more likely to be non-responders to CBT.

And, some authors have also raised concerns about the safety of therapy. For example; would hyper-arousal from a prolonged exposure therapy session be harmful in a patient that has an underlying heart condition.

But, fortunately we do have some evidence about psychotherapy in older patients, and in these studies it does appear to be safe and effective.

One study of 145 sexual assault survivors included both older and younger women, and evaluated whether age affected response to specific types of PTSD therapy. The authors found that older women were more likely to respond to prolonged exposure versus cognitive processing therapy. However, they did have improvements in PTSD symptoms with both modalities, and both modalities seemed to be safe and effective in these older patients. In addition, a trial of 11 older male Veterans found that prolonged exposure therapy was safe and effective.

And finally, there was a study of 42 Veterans with PTSD and traumatic brain injury who were provided cognitive processing therapy in a residential setting. And, though this study didn't focus specifically on older patients, TBI can involve cognitive impairment, so its finding may be relevant to older patients with cognitive difficulties. And, in this setting, CPT did have a substantial benefit.

We also know a lot about psychotherapy in older adults in the setting of depression. And, there have been several randomized controlled trials in depression and generalized anxiety disorder that also support the ability of older adults to do cognitive behavioral therapies.

These studies have also provided tips for conducting effective psychotherapy in patients with cognitive impairment; and these include using a consistent structure, frequently summarizing information for patients, and using multiple learning modalities. So for example, using written materials as well as taped materials in therapy sessions.

And really, the bottom line is that psychotherapy is an important component of treatment. Especially given what we'll talk about in a moment regarding the limited data on efficacy and safety of medications for PTSD in older adults.

Unfortunately, almost no trials of medications for PTSD have focused specifically on older adults, and few older adults have been included in the other, more general trials.

Those patients that were included are likely to represent the healthiest patients, and may not be generalizable to the larger population of older patients with PTSD that we see in the VA.

But again, we can draw upon results from studies in other settings. So, there have been medication trials focused on treatment of geriatric depression, psychosis in older adults, and dementia-related aggressive behavior and sleep disturbance in older adults.

These trials, and the general geriatric literature, provide us with some information about general cautions that we want to keep in mind when prescribing medications for older patients.

We need to be aware about problems that may affect the rate of drug metabolism, such as kidney or liver dysfunction. And, there can also be changes that effect enzymatic processes.

For example, the rate of demethylation that helps metabolize specific drugs may differ with age.

Older patients also tend to accumulate medications over time. So, polypharmacy and drug-drug interactions are a concern, as are medical comorbidities that can increase the risk of serious side effects.

And lastly, cognitive impairment can affect adherence to medications and ability to comply with proper dosing, and this, in turn, could lead to side effects as well as reduced efficacy for medications.

So, to provide some general recommendations for safer prescribing in older patients with PTSD; age truly is just a number, and it's important for us to consider patients' functional status and comorbidities, rather than just their chronologic age.

And, when prescribing new medications, we should start low and go slow. And, a good general rule for psychiatric medications is to use half of the typical starting dose, and to titrate up at half the usual rate. We should check kidney and liver function, if they're relevant, for specific drug metabolism, and adjust doses accordingly.

When adjusting medications, if possible, it's good to make one change at a time, and this helps to avoid confusion for the patient. But, is also helpful when we're concerned about specific side effects, because we can more easily associate side effects with a change in a specific medication.

And, reinforcing instructions with medication teaching is also important. We should review them with the patient or care giver. Many of us are lucky enough to have access to pharmacists who can help us out by providing medication charts or lists or medisets to improve medication adherence.

And, if there are still concerns, consider using home nursing visits for medication teaching and/or monitoring.

So now I'll review evidence about some of the medications that we may use in older adults with PTSD.

And, I'll start with Prazosin, because this is one of the few medications for PTSD that had a trial specifically done in older patients.

Prazosin is an alpha-1 adrenergic antagonist that has been used to treat nightmares in patients with PTSD. And, an open label trial was conducted in 9 men with PTSD due to combat or the Holocaust, with a mean age of 76 years old.

These patients were given 2 to 4 milligrams of Prazosin, which is notably lower than the dose that's been used in trials with younger patients. And, 8 of these 9 participants had greater than 50% reduction in nightmares and there were minimal side effects. And, these were what we might expect with an alpha blocker. So, patients experiencing transient light-headedness, but there were no serious adverse effects.

And, a larger randomized controlled trial of Prazosin is currently pending. But, until those findings are released, this does seem to be a reasonable choice for older patients. But, we should use caution with dosing; starting lower and being careful about higher doses, such as 8 milligrams, which weren't tested in the trial.

Turning to SSRI's; these are the first line therapy for PTSD treatment in younger patients, and Paroxetine and Sertraline are both FDA approved, although others have been tested and used.

These have been used in older patients for depression with good response, but there have been diminished responses for depression when patients have impairments in executive function, or when pathology has been present on neuroimaging.

So, it's possible that they may not work as well in patients with PTSD and cognitive problems. But again, we don't really have clinical trial data to help us sort this out.

There is some caution with use of Paroxetine, because it has more anticholinergic effects than the other SSRI's, and this could lead to cognitive side effects.

Fluoxetine, or Prozac, is also notable for its long half-life. So, if we're worried about side effects or drug-drug interactions, this could be a concern.

And, for these reasons, the typical first choice for PTSD in older patients is Sertraline.

Looking at the SNRI's (venlafaxine and duloxetine), these inhibit re-uptake of both serotonin and norepinephrine.

And, venlafaxine has been shown to be effective for PTSD in clinical trials, though again we don't have any specific data in older patients. But, there are some trials that show utility in geriatric depression. And, in these trials, side effects were similar in older and younger patients.

Looking at TCA's; again, there is evidence from trials in geriatric depression that these may be helpful, but there are a number of problems in using TCA's in older patients.

Earlier, I had mentioned age related decreases in demethylation, and this does affect TCA's, and can lead to slower metabolism.

TCA's can also have anticholinergic, antihistamine, and alpha-1 antagonist effects that are concerning, as they can cause cognitive impairment, falls, and orthostatic hypotension.

So, for these reasons, TCA's are not as well tolerated as other classes of medications, and they're more of a third or fourth line choice for older patients with PTSD, or avoided entirely.

Now, I'd like to talk about targeting some specific symptoms that are highly comorbid in PTSD, such as sleep and anxiety problems.

Thinking about sleep; Trazodone is a common medication used for PTSD that may be helpful for sleep disturbances in older patients.

One caution is that it can cause QT prolongation, so providers should check patients' cardiac history, and consider getting an EKG to make sure their QT interval is not prolonged before prescribing Trazadone.

Mirtazapine has been shown to be effective in PTSD, particularly for targeting sleep symptoms. And interestingly, one of the side effects that can limit its use in younger populations - its stimulation of appetite and association with weight gain - may actually be beneficial in frail elderly patients.

But of course, with any medication we're concerned about side effects, so maximizing non-drug treatments is important.

And, there have been several studies that have shown success with behavioral therapies including: sleep hygiene, increasing daytime activities, such as exercise, light stimulation therapy, and cognitive behavioral therapy targeted at sleep.

Some medications to avoid for treatment of sleep and anxiety in older patients;

Benzodiazepines. We have no evidence that they're helpful in younger patients with PTSD, and they can indeed be very harmful in older patients.

10% of older patients will have a paradoxical response with agitation with Benzodiazepines, and they can have worsening cognitive impairment or disinhibition of behavior.

Zolpidem, or Ambien, has also been used for sleep disturbance. But, can in fact cause worsening nightmares in the elderly.

Moving on from sleep, we'll discuss another common comorbidity in older patients with PTSD; behavioral problems. And, certainly these can be very stressful for patients and their families.

So, one of the first steps to treating behavioral problems is to identify and treat the triggers.

Often, these can result from communication difficulties. For example, a patient may be in pain, but can't articulate that; they may have another medical comorbidity, for example, fluctuation in blood sugar, that could cause behavioral change; or, they may be experiencing boredom or loneliness.

Optimizing the patients' environment is important to create a calming environment. But, in patients with PTSD, it's also important to pay particular attention to avoiding trauma triggers.

For example, thinking about a patient with combat related PTSD; they may be triggered by seeing people in uniforms; or by watching images of combat on the news.

For patients with physical or sexual trauma, bathing or undressing with an assistant can be traumatic. And so, using same or opposite sex attendants, depending on what the patient is more comfortable with, is important.

In the geriatric literature, an approach called the 3 R's has been suggested to encourage positive caregiver interactions, and this includes: repeating things for patients and continually reorienting them, providing reassurance when they're distressed, and redirecting them to another activity when they're agitated.

Establishing a predictable routine is also important and, since we're discussing medications, I'd like to review some general tips for going over a patients' medication list to minimize polypharmacy.

So, where we can, we should remove or replace medications with cognitive side effects. And, some common ones to look out for in the elderly include: anticholinergics, which may be commonly prescribed for bladder

irritability or other urinary symptoms; antihistamines, which, as I mentioned previously, can be over the counter sleep medications; and opiate medications.

We should remove or replace medications that have harmful drug-drug interactions, and we should evaluate whether we can remove low priority medications.

For example, something we see commonly in primary care is that patients accumulate a number of “as needed” medications for conditions that no longer bother them anymore. But, they’re not really aware of what they’re using the medication for, and so they continue to take it.

Also, we should reconsider the risk benefit ratio of each medication. So, we would consider prevention of a cardiac event very differently in a 50 year old, versus a 90 year old that may have a reduced life expectancy and other comorbid conditions that could increase the risk of the medication.

And reflecting this, many geriatric societies are recommending more liberal goals for glucose and blood pressure control, as the risks may outweigh benefits of tight control in some older patients.

Other non-pharmacologic strategies that have been shown to be effective in improving behavioral problems include structured socialization activities, such as pet therapy, viewing family photos, music and art activities, and exercise.

Cognitive behavioral therapy and cognitive stimulation therapy with interactive games have also shown benefit.

In contrast to many of these successful behavioral therapies, trials of medications for behavioral problems have been less successful. Trials of mood stabilizers have shown poor success in patients with agitation, and these have serious side effects that limit their use.

Typical antipsychotics are associated with an increase incidence of extrapyramidal side effects, tardive dyskinesia, and orthostatic hypotension in older patients and, therefore, should also be avoided for treatment of behavioral problems.

Looking at atypical antipsychotics, a study of psychotic depression found that these had a similar side effect profile in patients over age 60, compared to younger patients, and these include a number of metabolic problems, such as abnormalities in glucose and lipids, as well as weight gain.

In addition, pooled data from randomized controlled trials shows that antipsychotics are associated with a higher risk of death when used for dementia and agitation.

Adding to the concern about use of atypical antipsychotics for PTSD, a trial published in 2011 looking at risperidone as an adjunct for patients with PTSD that haven’t responded to SSRI’s found that there was no significant effect versus placebo.

A study conducted in 2012 tried to simulate a more real world situation for the use of antipsychotics. And, this included 332 patients greater than 40 years old - the mean age was 67 - who had psychotic symptoms associated with PTSD, dementia, schizophrenia, or depression.

And, patients were randomized to quetiapine, olanzapine, aripiprazole, or risperidone with no placebo.

Providers could actually eliminate 1 or 2 of these potential medications based on specific concerns that they might have had for that patient. And, the trial was conducted in an open label fashion, so the providers could adjust the dose or discontinue the medication at any time.

And, the authors found that there was no significant improvement in psychopathology with use of any of these medications, but 36.5% of patients developed new metabolic syndrome within the first year of the trial. And, 23.7% of patients - almost 1 in 4 - had a serious adverse event, and these include death, hospitalization, or an emergency room visit for a life-threatening condition.

Reflecting this, there was also a high discontinuation rate of atypical antipsychotics, with 40-50% of patients discontinuing them by 6 months.

So, thinking about a real world approach that we could use to treat behavioral problems: we need to maximize trigger reductions, psychotherapy, and other non-pharmacologic therapies, and really carefully consider the risks and benefits of medications.

But, though I've described a lot of limitations in medications, benefits may win out in critical situations.

So, for instance, when a patient's behavior is threatening the safety of themselves or others, or when controlling that behavior might allow a patient to remain in their current housing situation.

And, in these cases it's important to have an informed discussion with the patient and their family about the risks and benefits of using antipsychotics or other medications for behavioral problems, and select the lowest dose possible, and use the medication for the shortest time possible.

So, to summarize what we've discussed today: there's minimal trial data to guide us in our prescribing practices for older patients with PTSD. But, many of the medications that we use for younger patients may be effective.

When using them, we should start low and go slow, and know specific side effects for older patients, such as anticholinergic effects.

We should maximize behavioral interventions and other types of therapies, consult experts in geriatric prescribing, and when we are using medications that may have serious side effects, have informed discussions with patients and their family members about our choices.

So, I'd just like to acknowledge several colleagues for their help in putting together this presentation: Dr. Thomas Neylan, who is the director of the San Francisco VA Stress and Health Research Program; Dr. Arnaldo Moreno, who is the Medical Director of Geriatric Psychiatry; and Dr. William Wolfe, who is a psychiatrist on the PTSD clinical team here at the San Francisco VA; as well as the National Center for PTSD for putting together this presentation and for all of their assistance.