SPEAKER NOTES

Mood Disorders and Anxiety in Children and Adolescents

Summarized by Thomas T. Thomas

Could our adult children who currently experience anxiety and mood disorders have been treated earlier if we, as parents, had been made aware of any particular symptoms that manifest themselves in childhood? At our March 22 meeting, **Glen R. Elliott, MD, PhD,** addressed this and other questions of interest to members. Dr. Elliott is an associate professor of psychiatry at U.C. San Francisco and the director of Child and Adolescent Psychiatry at Langley Porter.

"Depression and mood disorders in adolescents are a relatively new area to psychiatry," Dr. Elliott said. "Up until about 1984, we thought you needed a superego—the thing that beats on you—before you could become depressed. And the superego is not fully developed in young people."

Since that time, unfortunately, psychiatrists have detected evidence of depression in children, including suicidal tendencies in a patient as young as two and a half years. Children at that age typically cannot describe their feelings, but this toddler was seen repeatedly trying to jump off high places and run in front of moving cars. This and similar findings have led to a significant change in attitudes, especially in the growing belief that biology has a larger place in mood disorders than was previously thought.

Since the 1970s the suicide rate in adolescents has climbed dramatically. Where once an adolescent, someone in his or her mid-teens, was only one-third to one-half as likely to commit suicide as people in their twenties, that rate has climbed until it's about the same.

"In this case," Dr. Elliott said, "you don't ask why adolescents are suddenly having a suicide epidemic. Instead, you ask what used to protect them that isn't working now." He also noted that suicide is still rare in children aged ten and under.

What predictors indicate which children are likely to become depressed? This is still a new and relatively undefined area, Dr. Elliott said, with not a lot of success to date. However, some factors are obvious, such as the loss of a parent, usually the mother, at a young age, usually less than eleven years.

Some biological factors in mood disorders are also beginning to be understood from family genealogies. A colleague of Dr. Elliott's in Costa Rica is putting together a family tree involving more than 300 people where the inheritance of bipolar disorder is fairly well established. Other studies are showing similar results. Schizophrenia, however, is less susceptible to analysis of inheritance patterns because patients tend to be more asocial and not to start their own families.

What are the early or childhood symptoms of an illness like bipolar syndrome? This is difficult to answer, because children are not always sad when

they're depressed. Sometimes they are irritated, or bored, or anxious. The difficulty increases because children usually don't have the language ability to describe these feelings. If you ask a child "Do you feel blue?" you run the risk of him or her interpreting you literally, not thinking of possible alternative meanings such as "sad," and saying, "Of course I'm not *blue!* I'm not *any* color."

One of the problems in this area is the "glass ceiling" that exists between child psychology and adult psychology. "There are two different knowledge bases at work here, and they just don't intermix," Dr. Elliott said.

"We know, for example, that attention deficit disorder doesn't just go away when the child grows up. But what do the symptoms look like in an adult? Conversely, adults can define and describe their feelings while performing obsessive-compulsive rituals, but what are the manifestations in a child?"

Mental health workers, like others in the sciences, sometimes seem to believe in the power of naming. If we can name or identify something, we think we can control it. This has led to certain trends in psychiatry. For example, for a time in the 1980s, many different symptoms including bedwetting were thought to result from depression. For a while, schizophrenia was linked, erroneously, to bipolar disorder. Fortunately, this tendency to rely on names is dying out.

Despite the apparent biological basis of some adolescent mood disorders, experiments with antidepressants have been unsatisfactory. A study in the late '80s found that one-third of the patients aged fifteen to seventeen years got better spontaneously, or with a placebo. This was a higher recovery rate than with the test drug. Other research fails to show that antidepressants do much if any good with this age group.

One of the difficulties with such research is the nature of the patients. Parents want their children to get well—not get a placebo. So the test patients that researchers do get tend to be children who have already failed with a number of the currently prescribed medications. Apparently, their parents are volunteering them in the hope of finding *something* that works. Another problem is that the Food and Drug Administration doesn't always have dosing guidelines for experimental drugs for young children.

Interestingly, in most of these studies, young children and adults seem to have more in common than do either of these groups with adolescents. Adolescents are not big children, nor small adults, but an entirely different order of being. "Puberty has something to do with this," Dr. Elliott said.

He also noted studies of brain development that showed children's brains as sprouting, developing new skills and systems. Adolescent brains, on the other hand, seem to be "cropping" or discarding systems and skills that are not going to be used.

"We have few tools to look into the brain at this age," the doctor said. "For a long time, researchers used to study urine, which does not tell a lot about brain activity. Blood sampling is also limited, because of the barrier between the blood and the brain. And children will not usually sit still for spinal taps for research purposes, nor will their parents."

Positron-electron tomography (PET) scanning, which can show activity in the brain quite clearly, is not usually given to children because it involves high levels of radiation. Magnetic resonance imaging (MRI) is safer but tends only to

show brain structure. "The size of the ventricles is not directly related to brain function," Dr. Elliott said.

In short, researchers just don't have a good biological test for mental disorders, either in children or in adults.

A third approach—tracking the genes that affect and control brain development—offers some tantalizing possibilities. For example, researchers have identified a gene in mice that is not evident at sixteen days of growth, then is suddenly everywhere in the brain, then disappears within two days. "But that's still a long way from working with a depressed six-year-old," Dr. Elliott said.

The current revolution in molecular biology means that we may have a map of the human genome within the next decade, but that may not tell us much about schizophrenia, which researchers think may be caused by a number of factors.

Our level of understanding of the brain and how it works is still fairly primitive, Dr. Elliott said. "We've identified some of the parts, but we don't know how all of them relate and work together. It's as if I gave you a box containing all the components of a personal computer," he said, "and asked you to assemble it."

As an example, he cited the current research into neurotransmitters. "We used to know just a few—norepinephrine, serotonin, and monoamine. Now we are learning about a new one practically every week. To date, we know about some 200 regulators in the brain—which throws doubt on anyone who says 'Ah, this problem is all due to serotonin levels.' "

The good news, Dr. Elliott said, is that psychiatrists are more activist than they used to be. They used to believe that depression came and went, almost suddenly. Now, they know that a dysthymic or low-grade depression in children means a sixty percent chance of their developing a major or recurring depression later in life.

The bad news is that depression in children can cause problems later in life, because they may miss developmental opportunities, such as dating and exercising other social skills, that are appropriate to a certain age and can't easily be acquired later as an adult. Also, adolescents have self-esteem problems that get in the way of treatment, such as refusing to take their medications or otherwise being unable to deal with the stigma of being "crazy."

Still, Dr. Elliott said, this is an exciting time to be working with children's mental health. The specialty is getting a great deal of research attention, and laboratories are producing a flood of new medications—which are quite different from the neurotransmitter re-uptake drugs—for the first time since the 1970s.