

Improving early detection of psychosis.



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Psychosis – a severe mental disorder that makes a person temporarily lose contact with reality – is not a rare condition. Up to one percent of people will develop schizophrenia at some point in their lives, which in Switzerland would represent about 80,000 sufferers. However, it can take many years for the illness to be diagnosed, and late diagnosis has its consequences: Those affected need to take more medication, spend more time in the hospital, relapse more often, and have a higher chance of slipping down the social ladder. Against this backdrop, Professor Anita Riecher-Rössler has made early detection of psychosis a key focus of her research. Her aim is to identify people who are at risk of developing psychosis even before the onset of the illness so that treatment can start as soon as possible.

Together with her team, Professor Riecher-Rössler, a psychiatrist who heads the Center for Gender Research and Early Detection at the Psychiatric Hospital of the University of Basel (UPK), has devised a psychosis checklist for this purpose: In the first step, an experienced psychiatrist takes a detailed history from a person who wants to know their risk. This includes questions about temporary or less pronounced symptoms that are known to frequently occur years before the onset of the illness, for instance unusual perceptions, irrational fears, distrust and personality changes. In addition to these early symptoms, general risk factors such as genetic disposition or drug abuse are recorded. Based on the results, the psychiatrist can then assess whether a person is likely to develop psychosis over the next few years.

Putting a premium on accuracy

However, making a prognosis at such an early stage is not uncontroversial: What if the prediction is inaccurate and the person never develops psychosis? Critics point out that false positives have particularly serious consequences in mental disorder diagnosis, as they tend to lead to stigma. Professor Riecher-Rössler is aware of the problem: “Psychiatric diagnosis demands much better risk assessment than other kinds of diagnostic testing. Accordingly, our research in the past few years has been aimed mainly at improving the accuracy of predictions.”

A number of studies had shown that approximately 40 percent of people who were classed as high-risk based on a checklist went on to develop psychoses within a few years. Professor Riecher-Rössler’s team conducted a new large study with the

aim of improving on this accuracy rate. They tried out a number of other diagnostic methods in order to identify additional warning signs of the condition. The study involved 234 participants identified as “at risk” based on the checklist, who then had a number of tests such as hormone analysis, magnetic resonance imaging (MRI) and neuropsychological tests. When some participants developed psychosis – up to seven years later – the researchers were able to prove that, in retrospect, some of the tests had indeed yielded early warning signs.

The MRI results showed that gray matter, which consists mostly of neuronal cell bodies, diminishes in some areas of the brain even before the onset of frank psychosis. What was already known was that the substance is gradually lost over the course of the illness. The Basel study showed that this process sets in at a much earlier stage. In addition, a deterioration of fine motor skills and some aspects of memory performance was detected beforehand. While each of these additional tests would not be sufficient on its own to reliably predict psychosis, Professor Riecher-Rössler and her team were able to increase prognostic accuracy by combining these methods with input from the checklist – in one study using additional neuroimaging accuracy was increased to more than 80%.

New treatment approaches

Patients who learn through this process that they have a risk are not left to their own devices. Instead, they attend regular reviews, receive psychotherapeutic and social support, are educated about their condition, and so know exactly when to seek immediate help. If they do develop frank psychosis, they are also given antipsychotic medication immediately. “If there are only early symptoms and it is not yet frank psychosis, there’s no urgent need for the patient to take medication, so long as they have a stable life,” Professor Riecher-Rössler explains. If, by contrast, patients are at risk of suffering social deterioration, for instance by losing their job, then timely medication can be required.

Early detection of psychosis enables novel treatment approaches: There are plans to introduce a pioneering group therapy where people at risk of psychosis and new sufferers will meet to share experiences and learn how to deal with their (potential) illness. “For some advanced-stage patients, group therapy is no longer an option, because symptoms of the condition include a strong distrust of other people,” says Professor Riecher-Rössler.

A team at the Psychiatric Hospital of the University of Basel is developing new methods for early detection of psychosis. Timely treatment can have a decisive beneficial effect on the course of the illness.

Growing understanding of root causes

The investigation of processes that occur in the body during the preclinical stages of psychosis is also providing new insights into how the illness develops. Still, little is known about its causes. Scientists currently favor a two-stage model which assumes that individuals have a certain level of basic vulnerability, for instance due to genetic risk. If, then, during the course of life, mental or biological stressors or factors such as cannabis use occur, this can trigger the outbreak of psychosis. Anita Riecher-Rössler thinks that there is no single cause: “There is probably not just one ‘schizophrenia’; we deal rather with a group of schizophrenic psychoses with different causes. One major shortcoming of research in this area is that often everything is lumped together.”

She is, however, convinced that research into causes will make rapid advances in the next few years. In recent years, the EU has approved funding for three large-scale multicenter projects: Using what is known as machine learning, computer programs will analyze data on a large number of patients to identify patterns: “This method will allow us to go beyond comparing groups and start predicting risk for individuals,” says Professor Riecher-Rössler. In the future, such analyses are expected to help detect psychosis as early as possible and also to differentiate subtypes. The next step would then be “personalized” treatments tailored to each individual patient. ■



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