

[Research and Report]

## Mental Illness Prevalence Zone: A Study of The Goto Islands\*

Toshiro Takami \*\*

[Abstract]

The Goto Islands, which belong to Nagasaki Prefecture, the westernmost part of Japan, and the islands of the western tip of Nagasaki facing the Goto Sea, are a region with a high incidence of mental disorders such as schizophrenia. It is estimated, in the author's experience, to be five times higher than the national average. Some argue that this is because the islands are a closed, unique world. However, there have been no reports of the islands of Japan being a zone of high incidence of mental illness. Nor do they live on Gotō, only where they are from, that is, where their ancestors - themselves, their parents, their grandparents, or their great-grandparents - were born.

It could be that some virus, spirochete, or something else is involved. However, the Goto Islands and the islands of the western end of Nagasaki facing the Goto Sea are highly endemic for the retrovirus ATRV (adult T-cell leukemia virus). However, there are other regions in Japan where the adult T-cell leukemia virus (ATLV) is highly endemic, such as the Goto Islands and the islands of the western end of Nagasaki facing the Goto Sea. There are no reports of a high incidence of schizophrenia or other psychiatric disorders in these regions.

The Goto Islands and the islands of the western tip of Nagasaki facing the Goto Sea contain a large number of genes that are inserted into the genes by retroviruses and predispose to mental illnesses such as schizophrenia.

[key words] gotou insula, psychotic disorders, schizophrenia, adult T-cell leukemia virus, vector

[Introduction]

Psychiatric disorders among people from the isolated islands of Goto Island in Nagasaki (henceforth referred to as the "Goto Region", although it is not accurate) are characterized by the majority of schizophrenia, very few depressive disorders, and their anxiety disorders are diagnosed more frequently as psychogenic reactions. The anxiety disorders are characterized by the following characteristics: the greater the number of anxiety disorders, the more severe they are; the severity of the anxiety disorders, which are serious but fast to be cured; the difficulty in differentiating the anxiety disorders from psychogenic reactions; and the fact that social phobia, panic disorder, and obsessive-compulsive disorder are extremely rare and simple anxiety disorders.

The author has lived in Nagasaki City for more than 30 years, and has had many friendships with people from the Goto region. The existence of a large number of friends of

the author from the Goto region, therefore, has made it possible for me to prepare this report. To date, there have been no reports of a high incidence of mental illnesses such as schizophrenia in the Gotō region.

I know firsthand many students who were extremely bright in the Goto region who became mentally disturbed upon entering college and were expelled from school. I don't know of any friends or acquaintances from the Goto region who completed their college life without any setbacks. Almost all of them were mentally disturbed. He suspected that people from Gotoh had a virus or some other infection in their childhood.

[Case]

(Case 1) Male. Born on OO Island, a remote island in the Goto Sea, where he grew up to graduate from elementary school. Both his father and mother were born on the island and grew up there.

His father was a distant-sea fisherman and his family was wealthy. He was admitted to the University of N. Faculty of Medicine as a student. However, after entering the school, he had difficulty in advancing to the next level. Although he has a sociable personality, he was a problematic figure on the Judo Club, which he joined upon entering the school, due to many problematic behaviors, such as intentionally injuring an underclassman in the Judo Club. During a summer camp in his third year on the Judo Club, he suddenly escaped with a futon at night. He was then expelled from the club.

It took him 12 years to graduate from medical school. He spent 12 years in medical school and graduated from medical school, but he could not pass the national examination for six years, so he committed a violent act in the dormitory and was hospitalized in a mental hospital.

After six years of treatment in a mental hospital, he was discharged. He is currently living with his mother and is taking outpatient medication while attending a preparatory school in Fukuoka for the national medical examination. She is currently receiving Risperidone 7 mg/day, but her spontaneous decline is severe.

(Case 2) A female. She was born on OO Island, Goto Islands, where she grew up to the second grade of junior high school, but moved to Fukuoka when her father, a distant-sea fisherman, joined a distant-sea freight forwarder company. His father and mother were both born in Goto Islands, and both were raised in Goto Islands, where their ancestors were members of one of the most prominent families.

After the birth of her second daughter, she became acutely psychotic. Because her parents did not want her to be hospitalized in a mental hospital, she was admitted to the main hospital. Administration of Risperidone 5 mg/day calmed him down, but delusions, auditory hallucinations, and visions took three weeks to subside.

Four weeks later, she was discharged from the hospital. The patient was well controlled with Risperidone 2 mg/day.

(Case 3) The patient is a female, who is two years younger than her two sisters, Case 2. She was born on OO Island, Goto Islands, where she grew up until the sixth grade.

After the birth of her first son, she became acutely psychotic. Because her parents did not want her to be hospitalized in a mental hospital, she was admitted to the main

hospital. Administration of Risperidone 5 mg/day calmed her down, but delusions, auditory hallucinations, and visions took about two weeks to subside.

Three weeks later, she was discharged from the hospital. Thereafter, the patient was well controlled with Risperidone 2 mg/day.

(Case 4) A man. He was born on OO island in Goto Islands and grew up in Goto Islands. He had excellent grades and went to a prestigious public school in Nagasaki City. He also had excellent grades at a prestigious public school in Nagasaki City, and entered the physics department of Kyushu University with excellent results as an active student. However, instead of attending classes at the university, he became obsessed with pachinko (Japanese pinball), which he had been obsessed with since his high school days, and ran up a debt of 1.5 million yen. The loans were all from loan sharks, and his parents sold land in Gotō to pay off the debt.

The college is expelled because he rarely attends classes. After being expelled from school, he works at a pachinko parlor to make a living. His parents suspect that he has a tumor in his brain and bring him to the hospital.

A CT scan of the head shows no significant findings. Risperidone 4 mg/day is started. Parents persuade him to take the Common First Examination again; after 9 months of self-study, he retakes the Common First Examination. He said he was planning to go to the engineering or physics department of Kyoto University, but the results of the common first test were extremely worse than planned and he ended up enrolling in the math department of OO University. He did not take any psychiatric drugs for a year, and he informed us that he was doing well.

(Case 5) A man. He was a junior in the judo club of Case 1. Like Case 1, he was born and raised on OO Island, a remote island facing the Goto Sea. Upon entering university, he was forced by Case 1 to join the judo club. When he first joined the club, he was subjected to harsher treatment than Case 1, such as having his knee ligaments cut during standing techniques practice.

In September of his first year of college, he broke his right second to fourth metatarsal bone while tapping on the wall of a rooming house in the morning. Also, shortly after that fracture had healed, he suddenly lost consciousness and fell down while riding his mid-sized motorcycle at very low speed on a mountain road. The injury was minor, with no head bruises, and he was able to practice judo without resting. This loss of consciousness was followed by two more falls on the motorcycle.

He almost didn't attend class and couldn't move up to the next level, so he dropped out of school and went to work for a friend of his parents in Fukuoka.

He is a good-natured person and does not resent Case 1 at all, and he is very fond of it. The patient was diagnosed as mentally unwell since the time she started working in Fukuoka and came to our hospital. She had delusions and auditory hallucinations. He denied hallucinations. Risperidone 4 mg/day was started. Delusions and auditory hallucinations lessened. He works for a very close acquaintance of his parents and is very mild-mannered and has not been dismissed, but he has been noticeably unsuccessful at work.

[Discussion]

The first reason for the high incidence of psychiatric disorders, such as schizophrenia, in the Goto region is that it is a region where the adult T-cell leukemia virus (ATLV) is common. The retrovirus ATLV is capable of inserting its genes as vectors only into dividing cells in vitro<sup>1</sup>).

In Japan, there are several areas of very dense distribution of ATLV: the Okinawa Islands; the isolated coasts of Miyazaki, Kagoshima, and Nagasaki in Kyushu along the Goto Sea; the Goto Islands; some of the coasts of Shikoku; the Oki Islands; the tip of the Kii Peninsula; the Asuka, Oshika, and Sanriku coasts in the northeast; and the Ainu people in Hokkaido. Considering the dense distribution of the ATLV in these areas, it is likely that the ATLV came here on the Kuroshio Current.

Compared to the usual Japanese rate of 0.5-1.2%, the infection rate is 45.2% among the Ainu and 33.9% among the Ryukyus, 6).

The reason why there are no reports of a high incidence of mental illnesses such as schizophrenia in other areas, except for the isolated islands of Goto and Nagasaki in the Goto Sea, is thought to be because there is no gene that causes mental illnesses in those areas.

What transports these genes? Is it due to insects unique to the Goto region?

Globally, the ATLV shows a region-specific distribution along the Caribbean coast and in southwestern Japan, southwestern Japan and New Guinea, parts of the United States, almost all of the Caribbean Islands, the Ainu in Japan, northern South America, and especially in Africa. 4) There is still no satisfactory explanation for this distribution. No theory has yet been able to fully explain this distribution. Moreover, there are no reports of high incidence of mental disorders such as schizophrenia in these areas.

The Ainu people have a legend of Korobokkul. The Ainu have a legend called Korobokkul, which refers to a small group of people who came from the south in a boat. The Ainu loved the Korobokkul people. The Ainu were not a barbaric people. Even though they were not barbaric and they were big, they were driven northward to the north by the people from Korea who founded the Yamato court. The Korobokkul had the same skin color and appearance as the Japanese. The Korobokkul were assimilated into the Ainu people.

It was the Korobokkul who brought the ATLV to the islands of Goto, Okinawa, and Kagoshima. They came from Central America, the Inca Empire.

There are books in Japan that claim that there are people from Central and South America who rode the currents to Japan 6). 6) Latin America is the endemic area of the ATLV. And as a landing place for the currents from Central and South America, the Gotō region is as likely as any other area with high concentrations of the ATLV<sup>6</sup>). Possession rates are extremely low<sup>7</sup>).

In other words, the genes that make people who drift westward from Central and South America on the ocean currents highly susceptible to mental illnesses such as schizophrenia (and it could be an unknown virus, as well as a possible mechanism for mad cow disease). It could also be the same mechanism as mad cow disease. And then it washed ashore in the Goto region. It drifted to the Gotō island region and became indigenous there, contributing to the high incidence of schizophrenia and other mental illnesses in the region.

The Gotō region is often hit by yellow sand from the continent. It is thought that the DSS from the continent carries with it genes that make it highly susceptible to mental illnesses such as schizophrenia, and that this phenomenon is occurring because it coincides with the presence of ATLV. It is also possible that a virus or a virus-like agent carrying a gene that makes schizophrenia and other psychiatric disorders highly susceptible to occur may

have been carried along with the DSS, and this phenomenon may have coincided with the presence of the ATRV. However, epidemiological evidence shows that the Korean peninsula and mainland China have almost no ATLV.

It seems reasonable to assume that the ATLV is caused by the Ainu people. It seems reasonable to assume that the legend of Korobockle is the reason for the very dense distribution of the ATLV among the Ainu.

Mental illnesses such as schizophrenia are caused by a variety of reasons, and it is reasonable to assume that mental illnesses in the Goto region are caused by different factors than those in other regions.

[Finally]

It is very likely that there was a region in Latin America where mental illnesses such as schizophrenia were extremely common. And that region can now be considered to have disappeared.

A drifter from the region where mental illnesses such as schizophrenia were common in Central and South America drifted to the Goto region, and mixed with the indigenous people of the Goto region, which is thought to have been the cause of the present high incidence of mental illnesses such as schizophrenia in the Goto region.

Because of the peculiarity of the mental illnesses in the Goto region, it is assumed that the genes of these disorders are somewhat different from those of the general population.

And there is an interesting distribution of ALS (amyotrophic lateral sclerosis), which has an interesting similarity to ATLV.

ALS has no known cause, usually shows no heritability, has a wide range of onset (20-60 years of age), and affects boys somewhat more frequently. It is always progressive in progression and most patients die within 3 years. Occasionally, the disease has a longer course. It begins with asymmetric upper or lower extremity muscle weakness and muscle atrophy, affecting the distal muscles earlier than the proximal muscles, but rarely beginning with the proximal muscles. Typically, it begins with atrophy of the hand muscles of the upper extremities. Dysarthria and dysphagia may also be present. The tongue is atrophied and twitching is seen. The facial muscles may be injured. Atrophy of the masseter muscle makes chewing difficult.

There are three types of ALS: arcuate ALS, familial ALS, and Guam ALS. Arcogenic ALS is the most common type of ALS. The three types are likely to be similar but different in clinical presentation. (They are slightly different in terms of age of onset, clinical symptoms, and clinical course.)

ALS is globally distributed. The prevalence ranges from 2 to 6 per 100,000 people in Japan and over 20 cities in Europe and the United States, and is relatively consistent across regions. However, there is one region where the prevalence is very dense and distributed. This is the Kii peninsula in Japan, which is also the area of concentrated ATLV distribution. And it is the Chamorro people of Guam.

---- In the Kii Peninsula, some areas have particularly high prevalence rates, including Kaizan town (33.3), Nankai town (9.8), Nansei town (152.7), and Kozagawa town (73.9) in Wakayama Prefecture. ----

[Conclusion]

I believe that at least in the Gotoh region, there is a high possibility that some gene has been inserted by ATL and that is the reason for the high incidence of schizophrenia. In other parts of the world, the vector ATL is present, but the gene to be inserted is not present. (However, the incidence of schizophrenia in Okinawa and the Ainu people has not yet been studied.

I also think there may be a fourth retrovirus. I believe there is a high probability of a fourth retrovirus.

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Toshiro TAKAMI : Akiyama hospital, Isahaya, Japan

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[mmm82889@yahoo.co.jp](mailto:mmm82889@yahoo.co.jp)