



THE ROLE OF THALAMIC SIZE IN SCHIZOPHRENIA PATIENT'S SUICIDE RISK

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Schizophrenia is a chronic mental disease that influences patients cognitive, emotional and functional conditions badly and frequently causes hallucinations. Relapses are often seen in schizophrenia.

Schizophrenia patients have enhanced suicide risk. Suicide is an important cause of death in these patients. Suicide attempt rate of schizophrenia patients is 10-15%

(Bulut 2012; Yüksel 2001).

It is reported that various risk factors could cause suicide in schizophrenia

These are;

Being young, single and unemployed men

The first period of the disease

Paranoid schizophrenia

(Sağlık Bakanlığı 2004;Popovic 2014).

Relation between poor prognosis schizophrenia and suicide is linear. Suicide risk of patients that having suicidal ideation is found higher in some situations.

These are:

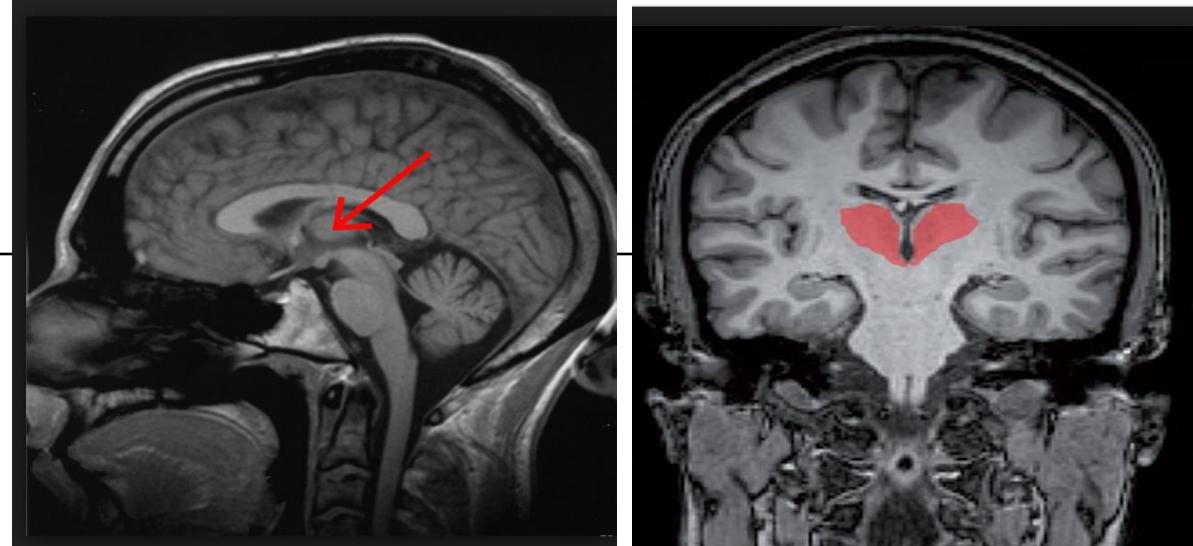
- Going into hospital frequently
- High doze drug usage
- Being transmitted a major depressive episode
- Being attempted suicide before
- Having another symptoms besides schizophrenic symptoms

- It is claimed that schizophrenia patients have some alterations in their thalamus.
- Thalamus is the largest component of diencephalon(80%). The two parts of the thalamus surround the third ventricle
- Its oval shaped and anatomically located the center of the brain. It has nerve fibers that projecting out to the cerebral cortex in all directions.
- The two halves of the thalamus are bulb-shaped masses, about 5.7 cm length in human.



- Thalamus is comprises of a lot of nuclei and it is an important station that all senses, except sense of smell, passed through before arrive to the cortex.
- It is regulates the purposive and conscious behaviors.
- It acts some kind of filter on some stimulus therefore concentration on essential stimulus occurs.
- Thalamus plays role on increasing, decreasing, blocking the stimuli. When unnecessary stimuli is decreasing the essential stimuli is increases.
- The thalamus is functionally connected to basal nuclei and cerebellum. Thus it plays an important role in regulating motor responses.

(Türkel 2007).



- Various brain imaging methods are used, to evaluate the functional impairments that may occur in schizophrenia.
- Magnetic Resonance Spectroscopy(MRS) and Magnetic Resonance Imaging(MRI) are frequently used in psychiatric researches because these methods are provides data about both brain structure and metabolism.

(Üçok 1999, Başoğlu 2006).

- Başoğlu et al.(2006) performed a study in Turkey and they compared first-episode patients and chronic schizophrenic cases with regard to right thalamic metabolites with MRS. Results of this case showed that both first-episode patients and chronic schizophrenic cases have lower metabolite levels in right thalamus. Besides this study showed that after the first-episode neuronal integrity impairment isn't proceed.

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- MRI investigations of schizophrenic patients brains showed decreased volume in thalamus. This thalamic volume loss especially seen in medial dorsal nuclei.

(Bricman 2004; Coscia 2009).

Unadjusted mean thalamic volumes in patients and healthy volunteers (mm³) (Coscia 2009).

	Patients		Healthy volunteers	
	M (n 5 25)	F (n 5 10)	M (n 5 23)	F (n 5 10)
Right	5,563 (645)	5,223 (686)	5,891 (674)	5,837 (426)
Left	5,223 (686)	4,883 (574)	5,657 (575)	5,905 (527)

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- Chen et al(2014) evaluated the anatomical changes that occurred in schizophrenic patients brain with MRI. They indicate that schizophrenic patients have volume loss in right thalamus and bilateral hippocampus.

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- Giakoumatis et al. (2013) compared suicide attempters to non-attempters, and they indicated that suicide attempters have volume loss in thalamus.

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- Che Tu et al(2015) studied schizophrenic patients thalamocortical MRI's and their results disclose that schizophrenic patients have sensorimotor and cognitive impairments.

- ***In conclusion,*** various studies that brain imaging methods used, showed thalamic volume loss in schizophrenia. Volume loss in thalamus could cause suicide attempt affectively the mood of patient. Therefore future studies examining the relationship between thalamic volume loss and suicide attempt is suggested.
- Hence the patients with thalamic volume alterations have increased suicide risk, close follow up in this patients is required.

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THANK YOU

