

Fertility in Females with Thalassemia Major: Determination of Reproductive Status and Relation to Iron Overload

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Synopsis:

The improved long-term survival of thalassemia major (TM) patients has resulted in increased focus on the ability to preserve women's fertility and prevent premature menopause. Fertility is compromised as a result of iron damage to the hypothalamic/pituitary axis and to the ovaries. Despite improved iron measuring methods the relationship of fertility to the extent of iron overload has not been well studied. Studies on prediction of the reproductive status and intervention for preserving fertility are lacking.

Ovarian reserve testing (ORT) has become established in the fertility setting where it is used as a counseling tool and guide for treatment. Among the tests used, serum anti mullerian hormone (AMH) and ovarian ultrasound for antral follicle count (AFC) show the most significant promise and correlation to fertility status. There is no data relating ORT in thalassemia.

We propose to assess these tests and baseline reproductive hormonal levels in 16-18 adult females with TM, and correlate them with iron overload status. Patients' fertility status will be evaluated and graded by an expert reproductive endocrinologist. This data will then be analyzed for its relation to the current and preceding 5 years iron overload, as assessed by liver iron concentration. In addition correlation to NTBI and markers of oxidative damage will be determined as well as descriptive data on prior chelation pattern.

This study can provide data relating ORT in thalassemia and present the basis for a larger longitudinal study. Patients could gain more knowledge of their functional ovarian reserve, thereby improving their chelation pattern and psychological well-being.