Premature Ovarian Insufficiency (POI) is an ovarian dysfunction characterized by the cessation of menstruation before 40 years old, which affects around 1 in every 100 women between 30-39 years. In recent years the search for molecular biomarkers associated to POI intensified. The presence of mutations and polymorphisms in genes associated with the development, recruitment and oocyte atresia have been observed. Follicle-stimulating hormone is a well know marker of ovarian responsiveness. The hormone induces follicular maturation by acting on the FSH receptor in granulosa cells. Mutations on the DNA sequence of FSH receptor are associated to severe forms of amenorrhea but common variations are supposed to be associated to POI. The aim of this study was to evaluate the incidence of FSHR polymorphisms in our population contributing to the elucidation of the etiology of POI. We evaluated 100 women with POI and 123 controls. Cytogenetic analysis and genotyping of Asn680Ser and Ala307Thr polymorphisms were performed by Taqman methodology for qPCR. 96% of patients presented normal karyotype. Genotype and allelic frequencies were compared to the control group. Ala307Thr polymorphism showed statistically significant differences for the genotype and allelic distribution (p 0.0001) and Thr allele was associated to increased risk for POI (OR: 2.42 IC:1.64-3.57). Asn680Ser wasn’t differently observed in the groups. We conclude that the presence of a polymorphism Ala307Thr is an important risk factor to POI in the Brazilian population evaluated.