

## Introduction

Telomeres are specialized terminal capping structures at the end of eukaryotic chromosomes, composed of TTAGGG repeats and a variety of proteins such as shelterin and telomerase. There are some telomere related diseases including male infertility that reveal the importance of repeat size in the disease occurrence.

## Aim

In this research study, we intend to explore possible relationship between leukocyte telomere lengths with azoospermia.

## Methods

In this case control study, peripheral blood was taken from 30 idiopathic infertile and 30 healthy and fertile men in Tehran.

Following to DNA extraction, relative telomere length was determined by real-time PCR method using specific primers to the telomere region and a single copy housekeeping gene.

The relative telomere length was measured according to a comparison between T/S ratios in patients and controls.

The results were analyzed by SPSS and REST software.

## Results:

The relative leukocyte telomere length (T/S) of azoospermic men was found to be significantly lower (95% CI,  $p < 0.05$ ) when compared to controls (0.54 vs. 0.84) meaning telomere length in the case group was significantly lower than those of the control group (95% CI,  $p < 0.05$ ).

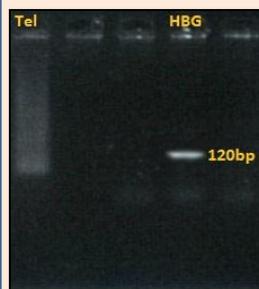


Figure1. Agarose gel electrophoresis following PCR with the tel 1 and tel 2 primers and HBG primers.

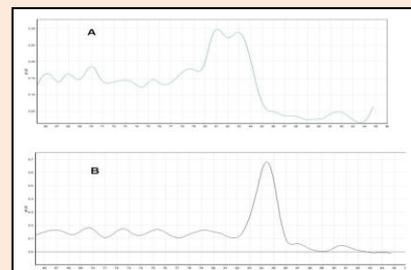


Fig2.A acceptable melting curve peaks for telomere (figure A) and HBG (figure B). The no template negative control is the flat line with no amplification (In both panel). Multiple melt curve peaks are due to amplified products of the template region with different sizes.

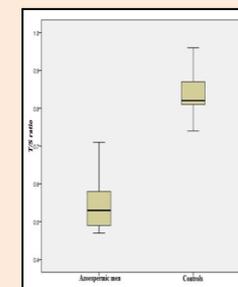


Fig3. Box plot distribution of T/S ratio percentage (relative telomere length) of azoospermic men and controls. The box plot displays the 25th percentile, median, and 75th percentile. The horizontal lines outside the box display minimum and maximum values.

**Conclusion:** This study demonstrated a strong association between telomere shortening and azoospermia in our subjects of Iranian infertile men. Besides, our research showed the blood could be enough informative and easy access tissue to study relative telomere size for determining azoospermia genetic causes where there is no sperm to be evaluated. However, future investigation using a bigger population will evaluate the present findings.