Efek Puasa Ramadhan terhadap Panjang Telomer Leukosit Relatif pada Penyandang DM tipe 2 = The Effects of Ramadan Fasting on Relative Telomere Length in Type 2 Diabetes Mellitus

Mona Dwi Hardika, author

Abstrak

Latar Belakang/Tujuan: Premature cellular senescence yang sering dikaitkan pada kondisi Diabetes Mellitus tipe 2 (DMT2) dapat meningkatkan berbagai risiko penyakit terkait usia. Time restricted feeding sebagai contoh puasa Ramadhan ditengarai dapat menghambat proses penuaan. Sejauh ini, telah banyak studi yang menilai efek puasa
Ramadhan terhadap berbagai parameter metabolik dan antropometrik, namun belum ada studi yang mengevaluasi efek puasa Ramadhan terhadap biomarker aging yang dinilai melalui panjang telomer leukosit relatif (TLR).
Metode: Studi dengan desain potong lintang dan kohort retrospektif pada subjek DMT2
dan subjek non-DM berusia 40 – 60 tahun yang menjalani ibadah puasa Ramadhan setidaknya selama minimal 14 hari pada bulan Mei – Juli 2018 dan bulan Mei – Juli 2019. Perbedaan rerata panjang TLR antar subjek DMT2 dan non-DM dianalisis dengan
uji Mann Whitney sedangkan perbedaan rerata TLR pada subjek DMT2 yang berpuasa dianalisis dengan uji Wilcoxon.
Hasil: Pada 39 subjek DMT2 dan 36 subjek non-DM subjek DMT2 yang ikut dalam penelitian ini didapatkan pemendekan panjang TLR yang bermakna pada subjek DMT2
dibandingkan dengan subjek non-DM (0,436 (0,034 –1,472) vs 1,905 (0,615 –12,380), p =0,000) dan didapatkan pemanjangan panjang TLR yang tidak bermakna pada 48 subjek DMT2 yang menjalani puasa minimal 14 hari (0,391 (0,021 – 1,515) vs 1,117
(0,528 –1,741), p=0,112), namun bermakna secara klinis.
Kesimpulan: Pada subjek DMT2 terjadi pemendekan panjang TLR yang secara statistik bermakna dibandingkan subjek non-DM sedangkan pada subjek DMT2 yang menjalani puasa Ramadan didapatkan pemanjangan panjang TLR yang tidak bermakna
secara statistik namun bermakna secara klinis.
.....Background/Aim: Premature cellular senescence which is often associated with type 2
diabetes mellitus (T2DM) can increase the risk of various age-related diseases. Time
restricted feeding such as Ramadhan fasting hypotesized could delay the aging process.
So far, there have been many studies assessing the effects of Ramadan fasting on various metabolic and anthropometric parameters, but no studies have evaluated the effect of Ramadhan fasting on aging biomarkers assessed by the relative telomere leucocyte length.
Method: An observational comparative dan cohort retrospective study was conducted from May to July 2018 and May to July 2019 on 40 – 60 years old T2DM and non-DM subjects. The mean difference between TD2M and control was analysed using Mann Whitney test and the mean difference relative telomere length in subjects with T2DM who underwent at least 14 days of Ramadan fasting was analyzed using Wilcoxon

test.
Results: A total of 36 subjects with type 2 diabetes dan 39 subjects non-DM who enrolled in this study, there were a significant decrease relative leucocyte telomere in
subjects with type 2, compared with controls (0,436 (0,034 – 1,472) vs 1,905 (0,615 – 12,380), p =0,000) but there were statitically insignificant but clinically significant increase relative leucocyte telomere in subject with type 2 diabetes who underwent Ramadhan fasting at least 14 days (0,391 (0,021–1,515) vs 1,117 (0,528–1,741), p=0,112.
Conclusions: In T2DM subjects, there were a statistically significant decrease relative
leucocyte telomere compared with controls while there were statitically insignificant but
clinically significant increase relative leucocyte telomere in subject with type 2 diabetes who underwent Ramadhan fasting.