

# STATINS, FIBRATES AND OXIDATIVE SALIVA CAPACITY IN MAINTENANCE HEMODIALYSIS PATIENTS.



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## Introduction

Oxidative stress (OS) is an important complication in hemodialysis patients. Statins and fibrates are well known of their pleiotropic effects including abilities to reduce oxidative stress. The relatively easy and non-invasive nature of saliva samples collection and the relationship between its and plasma parameters make saliva an attractive diagnostic tool.

The purpose of the study was to analyze and compare anti-oxidative capacity (TAC) in the saliva of hemodialysis (HD) patients treated with statins or fibrates versus non-treated.

## Material and methods

Sixty two participants (39 males and 23 females) on maintenance hemodialysis 3 times a week, mean age  $60.9 \pm 15.7$  years old were involved in the study. In the morning, before a mid-week HD session an unstimulated saliva samples was collected in all patients as well as in healthy subjects. Saliva samples were evaluated for anti-oxidative capacity using by enzyme-linked immunosorbent assay method (ELISA). Patients were divided into three subgroups i.e. treated with atorvastatin (ST) - 20 participants, treated with fenofibrate (FT) – 20 participants and non-treated (NT) - 22 participants. The study subgroups were sex, age and categorical variables matched. The Kruskal-Wallis ANOVA was used to verify statistical significances of continuous variables. No differences between groups were noted. Characteristics of the study population are presented in the Table.

## Results

In subgroups the mean Kt/V, ferritin as well as CRP values were comparable. Saliva total antioxidant capacity was similar in ST and FT ( $Z=1.77$ ;  $p=0.239$ ) whereas in NT it was significantly lower in both comparisons – ANOVA: ST vs NT  $Z=4.21$ ;  $p<0.001$ , FT vs NT  $Z=4.59$ ;  $p<0.001$ . LDL levels did not differ statistically except NT. The results are presented in the Figure.

## Conclusion

Both, statins and fibrates, treatments significantly increase anti-oxidative saliva capacity in maintenance hemodialysis patients, what may indicate on the decreased oxidative stress.

|  | Statins (ST)    | Fibrates (FT)   | Non-treated (NT) |
|--|-----------------|-----------------|------------------|
| <b>N</b>                               | 20              | 20              | 22               |
| <b>Males</b>                           | 24              | 31              | 12               |
| <b>Age (years)</b>                     | $61.5 \pm 13.2$ | $60.8 \pm 14.5$ | $59.3 \pm 11.5$  |
| <b>Catheters</b>                       | 4               | 5               | 7                |
| <b>Hemodialysis vintage (months)</b>   | $11.3 \pm 6.3$  | $12.1 \pm 5.2$  | $10.2 \pm 6.2$   |
| <b>Dialysis session time (minutes)</b> | $260 \pm 20$    | $250 \pm 30$    | $245 \pm 35$     |
| <b>Kt/V</b>                            | $1.22 \pm 0.2$  | $1.23 \pm 0.2$  | $1.24 \pm 0.2$   |
| <b>Diabetes (n)</b>                    | 6               | 7               | 9                |
| <b>BMI</b>                             | $23.6 \pm 2.2$  | $22.8 \pm 1.9$  | $23.1 \pm 2.0$   |
| <b>Ferritin (ng/mL)</b>                | $223 \pm 22$    | $233 \pm 36$    | $213 \pm 21$     |
| <b>CRP (ng/L)</b>                      | $3.22 \pm 1.9$  | $4.1 \pm 2.2$   | $3.94 \pm 1.7$   |
| <b>Hgb (g/dL)</b>                      | $10.9 \pm 1.3$  | $11.2 \pm 1.4$  | $11.2 \pm 1.6$   |
| <b>Albumin (g/L)</b>                   | $37.1 \pm 2.3$  | $36.2 \pm 3.1$  | $36.7 \pm 2.7$   |

