

The balance between oxidants and antioxidants in patients with genital warts

Mircea Tampa¹, Cristina Iulia Mitran¹, Madalina Irina Mitran¹, Ilinca Nicolae², Clara Matei¹, Daniela Mihaila³, Ionescu Cringu Antoniu¹, Mircea Ioan Popa¹, Simona Roxana Georgescu¹

1-“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania.

2-“Victor Babes” Clinical Hospital for Infectious Diseases, Bucharest, Romania.

3-Emergency Hospital "Prof. Dr. Agrippa Ionescu", Bucharest, Romania.

Genital human papilloma virus (HPV) infection is the most common sexually transmitted infection. It may be asymptomatic or manifests as benign or malignant lesions. The pathogenesis of HPV infection is not completely elucidated; in most cases spontaneous viral clearance occurs. In our study we have investigated the effect of HPV infection on the balance between oxidants and antioxidants in patients with genital warts. We have determined the serum levels of soluble receptor for advanced glycation end products (sRAGE), total oxidant status (TAS) and total antioxidant status (TOS) in 15 patients with genital warts and 28 healthy subjects. The serum levels of sRAGE were determined by ELISA method and the serum levels of TAS and TOS by spectrophotometric method. We have found lower serum levels of sRAGE in patients with genital warts compared to controls (1215.32 ± 266.12 pg/ml vs. 1168.20 ± 255.15 pg/ml $p > 0.05$). The serum levels of TAS were lower in patients with genital warts than in controls (1.90 ± 0.09 $\mu\text{mol Trolox Eq/L}$ vs. 2.03 ± 0.14 $\mu\text{mol Trolox Eq/L}$, $p < 0.05$). The serum levels of TOS were higher in patients with genital warts than in controls (3.09 ± 0.25 $\text{H}_2\text{O}_2\text{Eq/L}$ vs. 2.93 ± 0.22 $\text{H}_2\text{O}_2\text{Eq/L}$, $p = 0.054$) (Table 1).

We have also investigated the relationship between sRAGE and TAS and TOS. We have obtained a positive correlation between sRAGE and TAS ($r_s = 0.52$, $p < 0.05$) and a negative correlation between sRAGE and TOS ($r_s = -0.75$, $p < 0.01$) in patients with genital warts (Table 2).

Our results indicate that there is an imbalance between oxidants and antioxidants in patients with genital warts. The positive correlation between sRAGE and TOS and the negative correlation between sRAGE and TAS suggest that sRAGE might be involved in maintaining the balance between oxidants and antioxidants.

Parameter	Genital warts	Controls
sRAGE (pg/ml)	1215.32 ± 266.12	1168.20 ± 255.15
TAS ($\mu\text{mol Trolox Eq/L}$)	1.90 ± 0.09	2.03 ± 0.14
TOS ($\mu\text{mol Trolox Eq/L}$)	3.09 ± 0.25	2.93 ± 0.22

Table 1 – The levels of sRAGE and oxidative stress markers in the studied groups

sRAGE	r_s	p
TAS	0.52	< 0.05
TOS	-0.75	< 0.01

Figure 1 – Correlations between sRAGE and oxidative stress markers

References

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