Sodium orthovanadate (SO) has antitumor effect by reactive oxygen species (ROS) generation causing oxidative stress and apoptosis signaling. Sodium ascorbate (SA) could improve ROS generation and also antitumor effect. We evaluate the correlation between oxidative stress, apoptosis and antitumor activity of the association SO/SA in Ehrlich Ascites Carcinoma (EAC). Mice (n=12) were inoculated with EAC(i.p.). Treatment was initiated 24 hours after and lasted 9 days with SO, SA and SO/SA association (18.75; 187.50; 18.75/187.50 mg/kg per day). Negative (NC) and Positive Control (Dox) received saline and doxorubicin (1.2 mg/kg) respectively. On 10th day the histomorphologicals parameters (tumor growth inhibition) were assessed in mice (n=6, randomly) and proapoptotic activity was evaluated with ethidium bromide/orange acridine (EB/OA) in EAC cells. Six animals were kept for evaluation of lifespan. Oxidative stress involvement was evaluated in T-24 cells by determining the intracellular ROS production with DCFH-DA. Results were expressed by means±SD and were analyzed using: one-way ANOVA, Tukey-Kramer test. Treatments with SA, SO, SO/SA and Dox resulted tumor growth inhibition respectively 14.08±10.41; 54.93±9.76; 73.71±11.34; and 91.31±0.21% when compared to NC. The increase of lifespan was SA=13.50; SO=15.38; SO/SA=16.67 and Dox=100.00%. The pro-apoptotic effect was demonstrated by increasing of non-viable cells (NC=2.33; SA=3.62; SO=17.73; SO/SA=38.78 %) demonstrating a SO antitumor potential. SO/SA association induced the highest production of ROS (1.04 UF/mg protein) while NC; SA; SO; NAC; CAT were (0.33; 0.33; 0.38; 0.39; 0.47 UF/mg protein). These results suggest that SO/SA exhibited the best antitumor activity and this effect could be by ROS generation, oxidative stress induction and finally triggering apoptosis.

Word Keys: antitumor ascitic tumor sodium ascorbate and sodium ascorbate association oxidative stress