

**O-0300****Effect of physical exercise on psychological stress relief in cancer patients  
Objective assessment of psychological stress with salivary amylase activity**

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**key words** cancer • stress relief • salivary amylase activity

**【Purpose】** It is reported that stress and depression would be related to worse prognosis and lower quality of life (QOL) in cancer patients, therefore, the relief from stress is one of important themes to be solved. The salivary amylase activity (sAMY) innervated by the sympathetic nervous system (SNS) can be used as a stress parameter measured objectively and easily. In the present study, we investigated the immediate effect of exercise on stress relief in cancer patients by using sAMY.

**【Methods】** The subjects were 35 cancer patients who performed the inpatient rehabilitation. The patients performed the exercise program consisted of stretching, muscle strength training, biking on ergometer, and ADL training for 20 to 30 minutes. sAMY was measured using the sAMY monitor prior to exercise (pre-ex), just after exercise (post-ex), at 10 minutes after exercise (post-ex 10min), and at 30 minutes after exercise (post-ex 30min).

**【Results】** The results showed that the values of sAMY were  $207.0 \pm 147.2$  kIU/L at pre-ex,  $266.3 \pm 170.6$  kIU/L at post-ex,  $145.2 \pm 115.1$  kIU/L at post-ex 10min, and  $85.6 \pm 98.6$  kIU/L at post-ex 30min. Compared with the value at pre-ex by using post-hoc test, sAMY at post-ex increased and those at post-ex 10min and 30min decreased significantly ( $p < .01$ ).

**【Discussion】** The patients were in stressful condition at pre-ex as sAMY showed the high value. sAMY further increased at post-ex with SNS activation by exercise. sAMY decreased at post-ex 10min and 30min with SNS inactivation and relative parasympathetic nervous system activation by exercise termination.

As a conclusion, the immediate effect of exercise on stress relief in cancer patients was shown objectively by the change of sAMY.