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Cognitive training with double tasks to prevent cognitive decline after coronary artery bypass grafting

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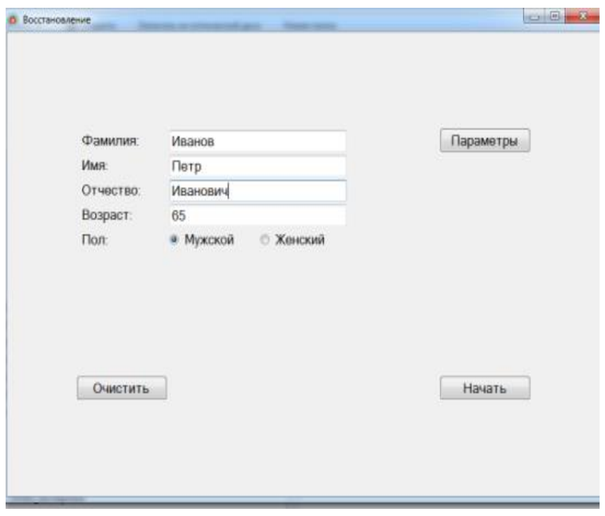
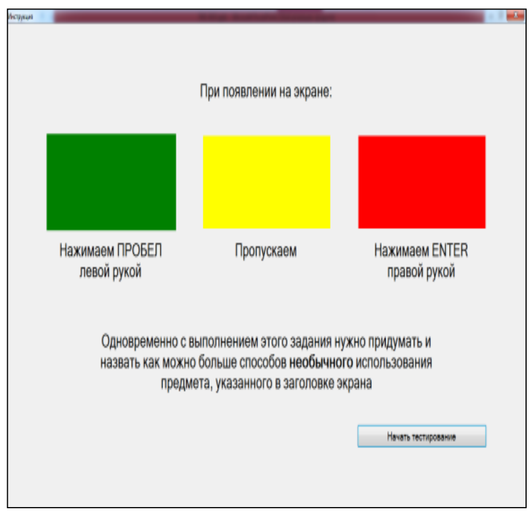
INTRODUCTION & AIM

The aim of this paper is to assess cognitive parameters in coronary artery bypass grafting (CABG) patients using cognitive training with double tasks.

METHOD





This prospective randomized study included 62 patients aged 64 [60; 72] years old. One group received cognitive training (n=29), and group went without training (n=33), and they were comparable in terms of clinical characteristics. The median score according to the MoCA was 24 [22.0; 27.0], which indicates the presence of mild cognitive impairment.

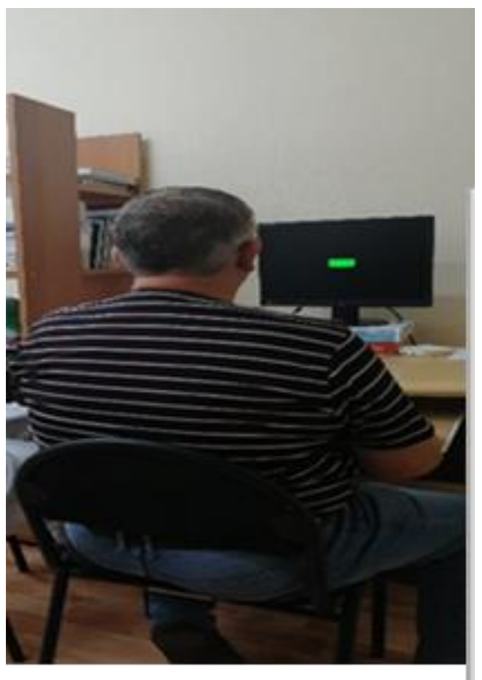
An assessment of psychomotor and executive functioning, attention, and short-term memory was carried out 2-3 days before the operation and 11-12 days after CABG.

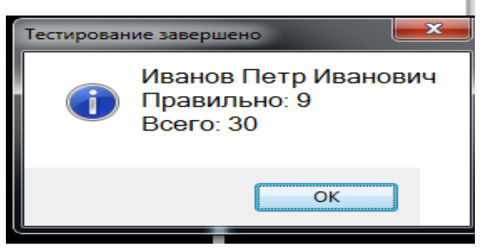
The threshold for deterioration in test scores was 20%.

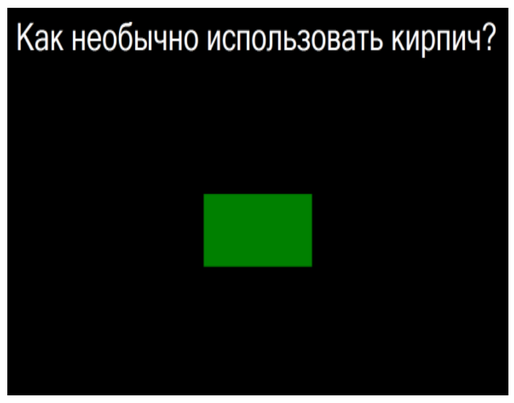
The mean duration of cardiopulmonary bypass was 77.0 [60.0; 94.0] min, and the surgery duration was 180.0 [160.0; 210.0] min.

The patients were given a daily course (5-7 days) of computer cognitive exercises featuring tasks on visual motor reaction and simultaneous execution of one of the other tasks (naming items with a certain letter, verbal counter counting, and naming objects that begin with a certain letter).

RESULTS & DISCUSSION







The results of the cognitive tests before surgery showed no intergroup differences.

In total, a 20% reduction was found in the post-operative tests: evaluations of psychomotor and executive functions revealed an increase in missed signals in 21% of patients who underwent training and in 30% who did not undergo training (p=0.05); we also observed increased errors in 6.9% of patients who underwent training and 15.2% who did not(p=0.02).

In the Burdon test, the performance index deteriorated in 14% of patients in the training group and in 24% who did not undergo training (p=0.04).

Short-term memory was worse in 14% of patients who underwent the cognitive learning tasks and 27% who did not (p=0.03).

CONCLUSION

The results of cognitive training demonstrated a reduction in the severity of cognitive disorders after coronary bypass.