

(0.5, 2, 3, 4 mM) compared to control unexposed groups. Unexposed and sevoflurane exposed cells (2D and 3D) were evaluated by optic microscopy and viability tests. Akt isoforms were assessed by immunofluorescence.

Results: Sevoflurane alters tumor cell proliferation and Akt isoforms expression in a dose-dependent manner. The phenotype of 3D 2mM sevoflurane exposed cells show an increased migration capacity which indicates increased aggressivity.

Conclusions: Sevoflurane exposure of breast cancer cells influences cell proliferation, phenotype and Akt isoform expression. Increased sevoflurane concentrations activate different Akt isoforms, putatively related to epithelial-mesenchymal transition and promote cancer cell invasion, migration and metastasis.

Key words: sevoflurane, Akt isoforms.

Changes of heart vegetative tonus after intravenous administration of three different agents for induction of general anesthesia

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Background: Aim of the study. Evaluation of heart vegetative tonus changes after intravenous administration of propofol, midazolam or tiopental for induction of general anesthesia.

Material and methods: The study was performed within Institute of Emergency Medicine and was approved by the Ethic Committee of the "Nicolae Testemitanu" SUMPh. In the study groups were involved 141 patients scheduled for elective general surgery. With TLC 5000 Holter ECG there were registered LFun (Low Frequency) – marker of sympathetic heart tonus, HFun (High Frequency) – marker of parasympathetic heart tonus and the LFun/HFun ratio – marker of sympathetic-parasympathetic heart balance. The heart vegetative tonus was registered 5 minutes in baseline and 5 minutes after intravenous administration of 2,5 mg/kg propofol with 2,0 mkg/kg fentanyl (group 1); 0,2-0,3 mkg/kg midazolam with 2,0 mkg/kg fentanyl (group 2) or 7-8 mg/kg tiopental with 2,0 mkg/kg fentanyl (group 3).

Results: Group 1: LFun enhanced from 66,8(95%CI62,6-70,9) to 72,0(95%CI 67,9-76,1) (p=0,004); HFun reduced from 33,2 (95%CI29,0-37,4) to 26,4(95%CI 20,4-34,3) (p=0,007) and the LFun/HFun ratio enhanced from 2,7(95%CI2,1-3,2) to 3,9(95%CI2,9-4,8) (p=0,003).

Group 2: LFun reduced from 67,7(95%CI 62,9-72,5) to 52,4(95%CI 62,9-70,0) (p=0,14); HFun enhanced from 27,4(95%CI21,4-37,0) to 47,5(95%CI 30,4-37,4) (p=0,01) and the LFun/HFun ratio reduced from 3,1(95%CI2,4-3,8) to 1,1(95%CI0,6-1,8) (p=0,02).

Group 3: LFun enhanced from 65,5(95%CI 60,8-70,1) to 73,5(95%CI 68,4-78,6)(p=0,001); HFun reduced from 34,5(95%CI29,8-39,2) to 24,5(95%CI20,3-28,7)(p=0,001) and the LFun/HFun ratio enhanced from 2,7(95%CI 2,1-3,3) to 4,4(95%CI3,5-5,2) (p<0,001).

Conclusions: Administration of propofol or tiopental for induction of general anesthesia is associated with enhanced heart sympathetic vegetative tonus. Administration of midazolam for induction of general anesthesia leads to the development of heart parasympathictonia.

Key words: vegetative cardiac tonus, LFun, HFun, LFun/HFun.