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Title: Biomarker determinations altered by anesthesia induction

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Body: Biomarkers are advanced tools for diagnosis, prognosis and monitoring of treatment and disease progression. The validation of biomarkers is a cumbersome process involving many steps. Serum samples from lung cancer patients were collected in the framework of a larger Lung Cancer Screening project. During the analysis of some biomarkers, differences between marker values depending on the time of blood extraction were inconsistent. Biomarker concentration differed significantly if taken before or after the induction of anesthesia. From 13 patients blood samples were drawn 1-2 days prior to surgery, on the same day and after anesthesia was applied. Markers SCC (microtiter plate), and CEA (Elecsys) were analyzed. SCC showed a very strong effect in relation to the sampling time. While the first two time points were well comparable (correlation $r=0,883$), patients showed a highly significant ($p = 0,0017$) increase in concentration when comparing the first two time points with the time point after anesthesia induction. The concentration of CEA had almost no variation ($r=0,993$ comparing time points as above). In this study we show the unexpectedly high influence of blood extraction timing in the concentration of the protein biomarker SCC but not in CEA. Whereas the possible causes for this alteration remains to be elucidated in further studies, these results are a caveat to make sure that biomarker sampling protocols are controlled for this type of effects.