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Victims and culprits of evidence biased and chaotic medicine presented by hemodynamic monitors

Hemodynamic monitoring in critical care setting and perioperative period has been studied for decades and generated a large number of publications. We observed a conceptual shift in philosophy by monitoring static parameters of dynamic, functional and flow directed hemodynamic monitors (HM). We also witnessed the change of hemodynamic monitoring from invasive to minimally invasive and finally non-invasive technologies. In the era of evidence based medicine, it is imperative to realize that the evidence of HM to improve patients' outcome is either small or, more often non-existent. Apart from the well known limitation related to modern dynamic monitors, none of the cardiac output (COP) monitors available today consistently present with <30% mean percentage error and >92% concordance. Most widely used modern dynamic COP monitors demonstrate a mean percentage error around 40-45% and most devices present with concordance <92%. Despite these disappointing results, it is surprising that a professional discipline such as medicine is able to conduct clinical studies using devices that have been consistently demonstrated inaccuracy and generate positive clinical outcome results. We consider this deviation as evidence bias or chaotic medicine as best or may be evidence corrupted medicine as worst. The reason for lack of evidence is probably related to the fact that human physiology is an incredibly a complex model. The novel hemodynamic devices provide a false sensation of security as those monitors are claimed to be effective to characterize fluid responsiveness which is taken as a sign of hypovolemia. This approach ignores the fact that HM cannot differentiate between absolute hypovolemia induced by blood and fluid loss and surgical stress which releases catecholamine that leads to vasoconstriction and various anaesthetic drugs that produce vasodilatation and relative hypovolemia as well as myocardial depression. We call for transparency in clinical research and a complete review as well as urgent refinement and modification of most of the present monitors not only for better patients' outcome, but also for us as physicians who accepted what other industries dealing with life and death would clearly consider unacceptable.

Biography

Ashraf EL-Molla, M.B., B.Ch., M.Sc., M.D, Consultant Anesthesiologist, Ministry Of Health, Egypt, Cairo. He is interested in airway management, his recent publication "Bridging Bronchus, type six as a new rare case of a bronchial anomaly

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