Anti-decubitus mattress

Severe traumatic brain injury (TBI) patients are monitored with continuous arterial blood pressure (ABP) and intracranial pressure (ICP). The pressure reactivity index (PRx) is a frequently used correlation coefficient between ABP and ICP to inform clinicians at the bedside about trends in global cerebrovascular pressure regulation status.

Jeanette et al. presented an unexpected influence of cyclic anti-decubitus mattress inflations and deflations on invasive ICP, ABP and PRx calculations in TBI patients. This might affect autoregulation guided management. In the database, 23% (9/39) of the patients show recurrent peaks in the monitoring signals. They hypothesize that these peaks are caused by (a combination) of hydrostatic change, local (cervical) compression and/or incorrect sensor zeroing due to positional changes induced by the anti-decubitus mattress. This warrants further investigation by the manufacturer and exploration of data filters [1].

1)
Jeanette T, Melisa B, Peter S, Marek C, Erta B, Ari E, Marcel A. Anti-decubitus bed mattress may interfere with cerebrovascular pressure reactivity measures due to induced ICP and ABP cyclic peaks. J Clin Monit Comput. 2020 Feb 8. doi: 10.1007/s10877-020-00471-5. [Epub ahead of print] PubMed PMID: 32036500.