**NATURE AND IMPACT OF IN-HOSPITAL COMPLICATIONS ASSOCIATED WITH PERSISTENT CRITICAL ILLNESS**

**Introduction:** In a recent study of over one million ICU patients, persistent critical illness (PerCI) was defined on epidemiological grounds as an ICU admission lasting ≥10 days. However, there is no knowledge of the in-hospital complications associated with its development.

**Objectives:** To test whether PerCI is associated with a greater incidence, rate, and specific types of complications.

**Methods:** Single-center, retrospective, observational matched case-control study.

**Results:** We studied 1200 patients (300 PerCI patients defined by length of stay (LOS) > 10 days, and 900 matched controls defined by LOS < 6 days) admitted to a tertiary ICU between August 2010 and September 2015. The median ICU LOS for PerCI patients was 16 days (IQR 12, 23) vs 2.3 days (IQR 1.1, 3.7) for controls, and median hospital LOS was 41 days (IQR 22, 75) vs 8 days (IQR 4, 17). A greater proportion of PerCI patients received acute renal replacement therapy (37% vs 6.8%) and underwent reintubation (17% vs 1%) and tracheostomy (36% vs 0.6%), all *p*<0.0001. Despite these complications, PerCI patients had similar hospital mortality (29% vs 27%, *p*=0.53). PerCI patients experienced a greater absolute number of complications (12.1 vs 4.0 complications per patient, *p*<0.0001) but had fewer exposure-adjusted complications (583 vs 1619 complications per 1000 ICU bed-days, *p*<0.001). PerCI patients had a particularly high overall prevalence of specific complications including hypotension (42%), sepsis (42%), pneumonia (41%), delirium (41%) & agitation (15%), renal impairment (39%), and pressure injuries (30%). However, the exposure-adjusted rate of all of these complications except for pressure injuries was higher in controls (*p*<0.001).

**Conclusion(s):** PerCI patients experience a higher prevalence, but not a higher rate, of exposure-adjusted complications. This finding suggests that the development of PerCI does not represent a consequence of iatrogenic complications but, rather, the underlying illness neither promptly improving nor leading to death.