Introduction:
Delirium is a major cause of complications in postoperative patient in ICU. Risk factors for delirium include poor cerebral hemodynamics and peri-operative cerebral desaturations. Intra-operative target cerebral oximetry monitoring may decrease the incidence of postoperative delirium in elective major abdominal surgery patients.

Methods:
A single-blinded, randomised controlled trial in patients undergo elective major abdominal surgery who received postoperative care in surgical ICU with age more than 65 years were randomised into two groups. The intervention group was received intra-operative target cerebral oxygen monitoring using cerebral oximetry whereas the control group was not. Delirium was assessed in both group at 24, 48, 72 hour postoperatively. Other risk factors for delirium, mechanical ventilator day, length of ICU stay, length of hospital stay and postoperative complication were recorded.

Results:
From August 2015-March 2016, 37 patients who met the criteria were randomised to 19 patients in intervention group and 18 patients in control group. Overall incidence of delirium was 27.03% (Intervention 21.05% VS Control 33.34%, p=0.401). Baseline cerebral oxygen in intervention group was 66.79 ± 3.11%. Desaturation below 10% from baseline was found in 8 from19 patients (42.1%) and was the only significant risk factor associated with delirium (p=.008, odd ratio 1.68). There was no significant different in mechanical ventilator day, ICU length of stay, hospital length of stay and postoperative complication between both groups. There was no complication associated with application of the cerebral oximetry probe in the intervention group.

Conclusion:
From this preliminary report can not demonstrated the significant different of intra-operative target cerebral oxygen monitoring by using cerebral oximetry in prevention of delirium. However the reduction of cerebral oxygen more than 10% from baseline in intervention group showed significantly associated with delirium postoperatively.