Introduction:
Sedation is a significant part of medical treatment in ICU patients. A too deep sedation is associated with a longer time of mechanical ventilation, lung injury, infections, neuromuscular disease and delirium, which can lead to a longer duration of ICU hospitalization, as well as an increase of morbility and mortality. Many patients spend a considerable amount of time in a non-optimal sedation level. A continuous monitoring system of the sedation level is therefore necessary to improve clinical evaluation.

Methods:
Our goal was to evaluate the incidence of non-optimal sedation (under and over sedation) comparing the parameters expressed from NGSedLine with clinical evaluations and to correlate oversedation and the incidence of delirium.

We have studied a cohort of patients admitted to the ICU of Spedali Civili of Brescia University Hospital requiring continuous sedation for more than 12 hours. In addition to standard monitoring, the patients have been studied using Next Generation Sedline (Masimo). Sedation depth was evaluated through RASS scale and the presence of delirium was evaluated with CAM-ICU scale.

Results:
We collected data from 50 adult patients. Our data showed high incidence of oversedation. 45 of our 50 patients had a SR>2 and 48 had a PSI level<30. A logistic regression analysis was performed and it showed statistically significant association between incidence of delirium and the age of the patients (p 0.009). The association between delirium incidence and Suppression Rate time was at the limits of statistics significance (p 0.059) and was statistically significant for non neurocritical patients (p 0.049). Our study didn’t show an association between delirium and the total time of sedation.

Conclusion:
Non-optimal sedation is an unsolved problem in ICU, affecting lot of patients, with a major incidence of oversedation compared to under-sedation. Our study shows an association between SR levels and the incidence of delirium.