Introduction:
Patients with poor-grade aneurysm subarachnoid hemorrhage (aSAH) World Federation of Neurological Surgeons (WFNS) Grades IV and V, have commonly been considered to have a poor prognosis (70-100% mortality). Though early intervention and aggressive treatment in NeuroICU has improved outcome in the past years, it is controversial because most of the patients left hospital severely disabled. The objective of this study was to investigate the clinical and social outcomes in intracranial aneurysm patients with poor-grade aSAH underwent different intervention therapies.

Methods:
A single center observational registry of 25 poor-grade aSAH consecutive patients, defined as WFNS Grades IV and V, treated at tertiary chilean referral center from December 2013 to March 2019 were enrolled in this study. The clinical data including patient characteristics on admission and during treatment course, treatment modality, aneurysm size and location, radiologic features, signs of cerebral herniation (dilated pupils), and functional neurologic outcome were collected. Clinical outcomes were assessed via GOSE and and socio-occupational outcome, both at discharge and at 6 months.

Results:
883 admissions, 190 were SAH. 84 patients Fisher III and IV. 25 patients WFNS 4 or 5: 20% mortality (5/25). Every death was declared out of therapeutic reach during admission by neurosurgeons. Mortality per year (3/3 2014, 0/4 2015, 1/3 2016, 0/4 2017, 0/6 2018, 1/5 2019), suggesting reduction of mortality rates while expertise increased. Of the 20 survivors, 3 were released in poor neurological conditions (GOSE ≥4) at the neuro ICU discharge. After 6 months, all patients (20/20) achieved GOSE ≤ 3, with adequate family, social and labor reintegration. 20% mortality is less than previously reported, and survivors had a favorable recovery, confirmed with neuropsychological test.

Conclusion:
Poor-grade aSAH patients in our study shows a more positive outcome than previously considered.