The rate of the C1-C4 tetraplegia has tripled in 30 years, in parallel, the mortality rate decreased by 90%. The respiratory etiology remains a leading cause of death in the first year.

In the acute phase, several mechanisms explain the severity of the respiratory disorder: a significant decrease in lung volumes proportional to the neurological level, decreased lung compliance and patielt compliance, vagal hyperactivity and a modification of the diaphragmatic function. The early use of a tracheostomy can reduce the duration of mechanical ventilation and reduce the complications of prolonged intubation. It must be systematically used in research areas but can provide information complementary to the clinical evaluation, which involves a degree of subjectivity. Detecting awareness requires that patients are comfortable and because of the fluctuation of awareness, a sufficient time of observation is essential. A favorable atmosphere to promote the emergence of awareness comprises personalized stimulations such as sensory regulation programs. Music, noninvasive brain stimulations and several drugs can also boost awareness detection. A program integrating these practices is proposed to patients awakening from coma or for a specific assessment before the admission in dedicated units for patients in VS/MCS.

**Keywords**  
VS; URW; PCCRU  
**Disclosure of interest**  
The author has not supplied her declaration of conflict of interest.

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### CO19-002-e  
**The withdrawal of tracheostomy and the use of NIV in tetraplegics patients in post-Intensive Care Units**

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The incidence of respiratory complications (36% atelectasis, pneumonia 31%) relate to 84% of C1-C4 tetraplegic patients, 60% for C5-C8 levels. The use of NIV helps prevent and treat respiratory complications in the acute phase due to the achievement of the inspiratory and expiratory function.

Among the different instrumental techniques: air-stacking, hyperinsufflations (pressure relaxant). They allow obtaining a prompt increased inspiratory volume. Their goals: to increase lung compliance, increase recruitment of atelecasics areas, reduce the stiffness of the chest wall.

Mucus plugging increases the work of breathing and promotes atelectasis can lead to pneumonia. Instrumental helps to fight against the mucus plugging: the in-exsufflator cough assist devices that provides a distal drainage of secretions by simulating cough.

Its use allows a reduction of the use of fibro-aspiration. Its most common settings: 40 cm H₂O and blowing +40 cm H₂O exsufflation.

This respiratory care must be part of a comprehensive rehabilitation program for systemic deficiencies tetraplegic patients.

**Keywords**  
Tetraplegic; NIV; Tracheostomy  
**Disclosure of interest**  
The author has not supplied her declaration of conflict of interest.

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### CO19-003-e  
**Epidemiology of patients admitted in awareness recovery units in the Nord-Pas-de-Calais region (France)**

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**Objectives**  
The main objective of this study was to describe the population of patients hospitalized in awareness recovery units (ARU), since the occurrence of brain-injury until their discharge. Secondary objectives were to know which criteria could influence length of stay in awakening centers and to judge evolution of patients’ autonomy.

**Patients and methods**  
Multicenter prospective longitudinal study about inpatients hospitalized in 2013 and 2014 in the 4 awareness recovery units (ARU) of the Nord-Pas-de-Calais region. Analyzed data were related to socio-demographic characteristics of patients, brain injury characteristics, characteristics of the stay in intensive care and ARU (including functional evolution) and study of the destination of discharged patients.

**Results**  
One hundred and eighty-two patients were included (117 male. 64.2%; 46 ± 14 yo) divided as such: CHU Lille (37.4%), Hopale-Berck (29.7%) Hopale-Fouquières-les-Lens (19.2%), CH Roubaix (13.7%). Patients suffered from traumatic brain injury (53.6%), ruptured aneurysm (22.1%), stroke (13.8%) and cerebral anoxia (6.1%), the distribution was homogeneous by center. Socio-demographic data of patients by pathology was similar to the literature data. The median coma duration was 29 days; time to admission in ARU was 57days, it was independent of the nature of pathology. The median length of stay in ARU was 65 days, but with substantial variability (mean 108 days). Time to admission since brain-injury was positively correlated to the length of stay in ARU. Autonomy of patients (physical, communication, GOS) was significantly improved between the beginning and the end of the stay in ARU. Conventional neurorehabilitation PMR units were the main destination of discharged patients.

**Discussion**  
This exhaustive study of all ARU of the Nord-pas-de-Calais region draws a global panorama of patients during their stay in intensive care upon discharge. It can serve as an initial reflexion to improve actual practices, and put the light on the necessity of leading other longitudinal works of the articulation between acute and rehabilitation care.

**Keywords**  
Coma; Awareness; Epidemiology  
**Disclosure of interest**  
The authors have not supplied their declaration of conflict of interest.

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