saturation and comfort scores showed no significant change before and after mobilization. Four sessions of mobilization were stopped because of important agitation of the patient with at T1 change in respiratory and hemodynamic values as well as a change in comfort scores. No adverse events were reported.
Conclusion: Mobilization is safe and probably feasible in children aged 0–2 years providing physiotherapists can adapt to the behaviour of the child and stop in case of poor tolerance.

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Dup-Reyg- A new system to increase the Fraction of Inspired Oxygen (FiO2) with a Boussignac system

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Annals of Intensive Care 2018, **8(Suppl 2):**Co-36

Introduction: Boussignac system (BS) administers oxygen and generates a continuous positive airway pressure (cpap). With the BS, fraction of inspired oxygen (FiO2) value is approximatively equal to the ratio between O2 flow and inspiratory flow (IF). In some cases, FiO2 decreases due to IF increase. To limit the FiO2 decrease during IF increase, we developed a new system- The Dup-Reyg system. The aim of this study was to test the Dup-Reyg system connected to a BS during IF increases.
Patients and Methods: The study was conducted on bench with a BS connected to a two-compartment adult lung model (Dual Test Lung®-DTL) controlled by a Maquet Servo I®ventilator. Three minute ventilations (MV 10 20 and 30 L min) with a Ti Ttot = 0.33 were investigated. FiO2 and MV measurements were made using an iWorx® GA207 gas analyzer. Three Positive End Expiratory Pressure (PEEP) were analyzed- 3, 5 and 10 cm H2O. The BS was supplied with an O2 flow. In order to increases the FiO2 during IF increases, we have evaluated the impact of the addition of the Dup-Reyg system (two corrugated tubing ISO 22, length- 18 cm for each Trunk) connected to expiratory way of BS. A Friedman test followed by a Holm-Sidak method were used to compare data.
Results: Means are expressed with their SD (Fig. 1). No statistical differences ($p > .05$) were found between (a-j j-r h-p h-n b-h i-f a-r b-n b-p n-p) (Fig. 1). Higher the MV, lower the FiO2 ($p < 0.05$). Moreover, higher the PEEP, higher the FiO2 ($p < 0.05$). The addition of the Dup-Reyg system at the entry of BS increases FiO2 ($p < 0.05$). The impact of the Dup-Reyg addition is more important with high MV. In our study, FiO2's absolute difference observed were equal from 5 to 22%.
Conclusion: The addition of a Dup-Reyg system to the expiratory way of a BS increases FiO2 significantly. This system could be implemented for the purpose of increasing the FiO2 when the IF is high and or when the oxygen flow delivery is limited (ambulance, disaster situations, war zone etc.). However, complementary studies must be carried out in order to verify its clinical application.

Ti/Ttot = 0,33	MV 10 L/min		MV 20 L/min		MV 30 L/min	
	BS alone	BS with Trunk	BS alone	BS with Trunk	BS alone	BS with Trunk
						
PEEP 3 cm H2O	(a) 82% (+/- 0.6)	(b) 99%(+/-0.6)	(c) 55%(+/-1)	(d) 76%(+/-0)	(e) 45%(+/-0.6)	(f) 67%(+/-0.6)
PEEP 5 cm H2O	(g) 88%(+/-0.5)	(h) 99%(+/-0.6)	(i) 66%(+/-0.6)	(j) 83%(+/-0.6)	(k) 52%(+/-0.6)	(l) 74%(+/-1)
PEEP 10 cm H2O	(m) 94%(+/-0.6)	(n) 99%(+/-0.4)	(o) 80%(+/-0.6)	(p) 99%(+/-0.6)	(q) 63%(+/-0.7)	(r) 82%(+/-0.6)

Fig. 1 Comparisson of Boussignac system (BS) alone, versus with Trunk

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NEMS protocol for Swallowing Disorders patients in ICU

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Annals of Intensive Care 2018, **8(Suppl 2):**Co-39

Introduction: Swallowing disorders (SD) are a major concern in Intensive Care Unit (ICU), with a prevalence of 15 to 87% (1). SD may be the cause of malnutrition, dehydratation and pneumonia (2). It may increase the hospitalization length, induce higher reintubation rate and delay tracheotomy removing (3) (4). Atrophy of laryngeal muscles, alertness and movement decreasing (related to the presence of endotracheal tube) and the use of sedative or neuromuscular blocking agents are important risk factors of dysphagia. Neuromuscular electrical stimulation (NEMS) is an interesting tool for the physiotherapist and studies provide promising result to support the use of NEMS associated to usual treatment in ICU patients with SD (5). A literature review highlights the lacks of standardized NEMS protocol for SD management in ICU. Objective—we propose a standardized NEMS protocol for SD patients in ICU for future research protocol.
Patients and Methods: The protocol aims to include difficult-to-wean patients after a long ICU hospitalization period and suffering from SD. The presence of SD is revealed by the Food and Oral Intake Scale (FOIS) and clinical examination (food and water test, coughing, choking and voice alteration). FOIS is the main outcome to assess the protocol (6). NEMS is associated to conventional SD treatment- Shaker exercices, thermal-tactil stimulation, effortful swallowing maneuver, laryngeal and lingual exercises and compensatory maneuvers. NEMS is performed with a Cephar Physio4 and small conventional electrodes. Electrodes are placed to supra and infrahyoid muscles and above the superior limit of thyroid notch. Two-phases current is used with frequencies varying between 5 to 80 Hz in three differents periods (warming-up, stimulation and relaxing). The total of the NEMS treatment varies between 16 to 26 min, one session per day until swallowing improvement or patient discharge.
Results: NEMS associated to usual therapy may improve the SD management. Literature highlights a decrease of lenght of hospitalisation and a higher FOIS evolution with the use of NEMS. We aim to published this protocol for supporting the use of a standardized NEMS protocol in clinical research.
Discussion: Additional studies are required to assess the efficacy of NEMS with a standardized protocol. Moreover, FOIS has limitations to evaluate SD and new validated tools should be described to assess more specifically the NEMS effects to the laryngeal muscle function.
Conclusion: A NEMS standarized protocol may be usefull for clinical research allowing to assess its efficacy in SD management in ICU patients.

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