Category :**Cardiovascular: Monitoring**

A101 - ***Impact on the vital signs of covid-19 intensive care patients during inter-hospital helicopter transfer***

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Introduction:

The Helicopter Emergency Medical Service (HEMS) Lifeliner 3 of the Radboud University Medical Center organized the first intensive care (IC) helicopter (Lifeliner 5) to transport critically ill COVID-19 patients in the Netherlands. In-hospital, pre-hospital and inter-hospital transfer of IC patients all bear the risk of complications. Most of the complications have impact on patients vital signs.[1-3] The goal of this study is to analyze the impact of the helicopter transfer of COVID-19 IC patients on the vital signs during take-off, midflight and landing.

Methods:

This prospective observational study was performed during the second COVID-19 outburst in the Netherlands. All inter-hospital helicopter transfers of COVID-19 IC patients who were monitored including non-invasive electrical cardiometry cardiac output (CO) were included in this study. Patients were included from November 2020–June 2021. Three predefined time frames were analysed. The first time frame of 10 minutes started with the actual take-off. The second 10 minute frame represent mid-flight. The third 10 minute time frame ends with the actual landing. In each patient the vital signs including CO data extracted in each time frame were averaged and analysed

Results:

Up to now 89 patients are included in this analysis. Mean age is 62.3±11.5 yr. Seventy percent are male. Mean weight was 91.3±16.0 kg. Body Mass Index 29.9±5.6. Vital sign data during the tree time frames are shown in table 1. Cardiac output data was available in 83 patients.

Conclusion:

These preliminary results suggest that helicopter transfers of IC COVID-19 patients have minimal impact on vital signs during take-off, mid-flight and landing.

References:

1. Beckmann U et al. Intensive Care Med. 2004;30:1579-85.
2. Flabouris A et al. Anaesth Intensive Care. 2006;34:228-36
3. Duke GJ et al. Med J Aust. 2001;174:122–125

Table:

	Take-off	Mid-flight	Landing	P value
HR (min-1)	72.3 [58.7-84.0]	71.2 [57.2-83.4]	70.9]57.1-83.3]	0.76
SpO2 (%)	93.5 [92.0-95.2]	94.1 [92.3-95.6]	93.5 [92.0-95.2]	0.45
Map (mmHg)	84.5 [75.2-92-9]	82.2 [73.8-89.3]	80.6 [73.0-87.8]	0.23
Et-CO2 (mmHg)	38.5[35.1-42.7]	37.3 [33.9-40.4]	37.4 [34.5-40.5]	0.42
SV (ml)	87.2 [70.7-122.7]	104.6 [82.8-130.6]	99.4 [80.1-128.9]	0.04*
CO (Lmin-1)	6.9 [5.0-8.8]	7.4 [5.7-9.6]	7.3 [5.6-9.7]	0.22
TSVR (dyne*cm-5m-2)	1017.0 [723.8-1415]	866.0 [668.9-1246]	881.9 [681.9-1173]	0.11

HR = heart rate; SpO2 = peripheral oxygen saturation; Map = mean arterial blood pressure; Et-CO2 = end tidal carbon dioxide; SV = stroke volume; CO = cardiac output; TSVR = total systemic vascular resistance. Data analysed using Kruskal-Wallis. P<0.05 being statistical significant.