# EXPIREMENT PROTOCOL OF AMBOVENT 1690.108 VENTILATION ON PIGS

ABSTRACT

On 2020 the COVID-19 pandemic outbreak occurred and infected a major papulation section, mainly the elderly.
Most of the hard-conditioned patients end up ventilated due to the virus that attack the lung.
MDA, First team and the army gathered for an enterprise called "AMBOVENT 1690.108" to utilize the standard Ambo bags and transformed it to an open-source, low-budget ventilation device that any country can use and mass product for their hospitals use.

To determine the safety and efficacy of the AMBOVENT 1690.108 a pre-clinical trial on live animal model is planned.

A 50 Kg domestic pig was chosen as the animal model due to its similarity in anatomy and physiology to the human body.

The pig will be acclimates in the Large animal Care Unit of the Hebrew University following transfer from Lahav. Fasting will be initiated on the night prior to the study with free access to water. On the day of the study pre-medication of IM Ketamine and IM Xylazyne will be given and then IV access will be established. Orotracheal intubation will be performed following induction with propofol and maintenance of general anesthesia will be achieved with propofol drip 1% 0.02-0.2 mg/kg/min throughout the study.

Ventilation will be first achieved with a standard ventilator for 15 minutes. Machine parameters and physiologic parameters will be documented continuously and blood gases will be drawn.

The Ambovent will be attached for 10 minutes and ambovent parameters and physiologic parameters will be documented continuously and blood gases will be drawn.

The ambovent parameters will be changed every 10 minutes to increase/decrease tidal volume/respiratory rate and pressure and the Ambovent parameters will be compared

to the true parameters using a standard ventilation machine. Physiologic parameters will be documented continuously and blood gases will be drawn.

Any Adverse Events or malfunctions of the Ambovent will be recorded.

In case of pneumothorax, a chest drain will be inserted and the study will be continued if possible.

Parameters that will be documented will be:

Overall time of ventilation

Ambovent parameters: FiO2, PEEP, Volume, Resp Rate, Pressure

True parameters: Tidal volume, Ventilation rate, PIP, P mean

Physiologic parameters: O2 Sat%, HR, BP, ETCO2

Blood gases: PH, aO2, aCO2, HCO3

| Hour | Ambovent parameters | | | | | | True parameters | | | | | Physiologic parameters | | | | | Blood gases | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min | FiO2 | PEEP | Volume | V rate | Pressure | TV | V rate | P max | P mean | | O2 Sat | HR | a BP | ETCO2 | | PH | aO2 | aCO2 | aHCO3 |
| | | | | | | | | | | | | | | | | | | | | |
| | AE/ Comments | | | | | | | | | | | | | | | | | | | |

Following the study, euthanasia will be done using IV KCl.