Israeli startup protects intubated COVID-19 patients from complications

The devices were being already used in China before the coronavirus outbreak, so that when the virus took hold, medical staff were already able to bring the device to the epicenter of the outbreak.

By ROSSELLA TERCATIN   APRIL 14, 2020 08:42

Hospitech's AnapnoGuard device being used in a Chinese hospital.
(photo credit: HOSPITECH RESPIRATION)

An Israeli startup is helping protect coronavirus intubate patients from further complications that often appear when a person is on a ventilator for a prolonged time.

The coronavirus outbreak has created a spike in patients who need to be intubated. However, as this has become the standard for those who are critically ill, being on ventilators for a significant amount of time can also cause severe effects, which include pneumonia and damage to the patient's trachea. For years, Kfar Saba-based Hospitech Respiration has been working on technology to avoid these effects, obtaining significant results certified in clinical trials and studies performed in several countries, as the CEO Yoav Venkert explained to *the Jerusalem Post*.

Before the emergency broke out in Wuhan, several hospitals in China were already employing its products. Therefore, when medical staff from all over the country convened to the Hubei province to help fight the disease, those coming from those hospitals brought the devices with them.

HOSPITECH RESPIRATION (Credit: Hospitech's AnapnoGuard)

"It marked the first time that our devices were used in the treatment of coronavirus patients," Venkert explained.

Established about ten years ago, Hospitech does not produce ventilators, but rather machines that ensure effective sealing of the trachea and therefore prevent leakage of secretions from the oral cavity to the lungs, which can cause pulmonary infections and specifically the so-called Ventilator Associated Pneumonia (VAP), regardless of the reason why the patient was intubated in the first place.

If it is crucial the trachea is sealed for this purpose, an excess of pressure to obtain this result can also damage it. The startup's technology therefore aims at helping doctors and nurses to make sure that the special balloon that is standardly placed around the tube inside the intubate patient's trachea is at the minimum pressure require to seal it and not more than that.

"Statistics show that in Israel about 25% of the intubate patients develop VAP, and similar if not higher levels are recorded in Europe and China. In the US the numbers are slightly lower, but there is also a problem related to under-reporting the issue in order to maintain the hospitals' reputation," Venkert said. "Our newest fully automated device, called AnapnoGuard, constantly monitors the trachea so that it is sealed and adjusts the pressure so that it is at the lowest possible pressure, while it also removes the secretions. Studies that we have done in Israel and Europe show that the number of patients who developed complications significantly dropped: for example from 26% to 7% in the study in Israel, from over 30% to less than 15% in Italy."

Hospitech also offers another device that helps medical staff adjust the pressure of the sealing balloon when they intubate a patient. The device, which looks like a syringe with a digital display similar to a manometer, is single-patient use and extremely affordable with a cost of less than $20 per piece.

"Before the outbreak began, we were selling about 20/30,000 of them per month, now we are up to 40,000," the CEO pointed out. "This instrument is not only useful because there are more intubate patients, but also because many doctors and nurses who have different specialization have been transferred to care for the coronavirus patients and might not be as practical with putting them on ventilators."

Hospitech's AnapnoGuard, which has already been approved in Israel, the US and Europe and before the outbreak was in an early commercialization stage, has currently been adopted by five hospitals in Israel to face the crisis, including Sheba and Rambam. In an effort to help with the emergency, the company decided to provide them for free.

Venkert pointed out that it is too early to assess the results of the system on coronavirus patients.

"The numbers are too small and there many factors in place for each patient," he said. However, he added that the feedback from medical teams is very positive, "because it reduces the exposure of medical staff to infected patients and the need of interaction, as well as their workload."

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