

【論文の欧文要旨】

A study on points of respiratory assist devices using in pre-hospital care

by
Kenji FUJIMOTO

Background : In Japan, increasing the number of ambulance requests, the case with the use of respiratory assistance devices in prehospital care by paramedics is also increasing. When a patient experiences respiratory failure, the first responders frequently select a respiratory assist device (RAD) such as Bag Valve Mask (BVM), Jackson Rees (JR), or BVM with Gas Supply Valve[®] (BVM+GSV). This is based on both evaluation and experience as there is no study indicating which RAD is the best choice at the pre-hospital emergency site. This study clarified the precautions when using BVM, JR, and BVM+GSV in pre-hospital emergency medical care with healthy volunteers.

Methods : Twenty healthy adults were fitted with a RAD while breathing spontaneously, and changes in vital signs and ETCO_2 were observed.

Results : The level of ETCO_2 became elevated after each RAD was attached. The value was significantly higher in the JR group than in the others.

Conclusions : The study showed that even in the presence of spontaneous breathing, ETCO_2 increased markedly with the application of respiratory assist devices that are used in pre-hospital care for conditions such as hypoxemia and ventilatory disturbance. The increase in ETCO_2 was particularly significant in the JR group, suggesting the need for caution when selecting JRs for pre-hospital care. As the number of subjects was only 20 for each RAD, studies with a larger sample size are needed.