

Review/Update

CONTROLLED VENTILATION

Are You (and Your BVM) Up To The Task?

Since the late 1950's, the Bag-Valve-Mask resuscitator, (originally developed by AMBU in Denmark), has been the mainstay of the healthcare provider for emergency ventilation of the patient in respiratory and/or cardiac arrest. These self-inflating balloons (a development from the anesthesia machine "black breathing bag") have proliferated into an industry estimated to be worth some 60 million dollars in the U.S. alone. But what of the effectiveness of these devices?

Certainly, in the early days of CPR (first truly defined in 1961), the "AMBU Bags" (as all BVM's have now become known) were the only available adjuncts for the rescuer which did not require the use of exhaled breath to ventilate the patient. As such, they were a significant advance in emergency respiratory care. However, considering the major advances in medicine that have taken place over the last 64 years, we are still, in the most part, relying on old technology to perform the key task of oxygenating the respiratory/cardiac arrest patient.

The American Heart Association "Guidelines for CPR" have quite clearly identified that these devices are generally ineffective in providing

adequate ventilations to the patient. A wealth of clinical evidence to support these claims has been accumulated and yet this evidence has, for the most part, been ignored as die-hard "baggers" continue to utilize these devices. This continued use is not based on sound clinical evidence that they provide good ventilation, but seemingly because - "it has always been done this way".

Some claim that the "feel" they get from the BVM allows them to make clinical judgements on the patient's lung condition. In reality what they are probably feeling is the back pressure created by the high flowrates generated when squeezing the bag too hard or for too short an inspiratory time. This masks the actual compliance and resistance of the patient's airway.

The vast array of clinical studies that have been published (including the landmark study by Aufderheide et al published in Circulation in 2004) clearly show that this original technology is ineffective in the way in which it provides ventilation (in the majority of healthcare provider's hands) and potentially dangerous, especially in some non-protected airway situations.

The O-Two Medical Technologies SMART BAG® has been proven to be effective in controlling the ventilations by constantly training the rescuer, with every squeeze and release of the bag, to slow down and deliver controlled ventilations. Its use is now widespread however, there are still a large number of users who do not see the need for such a device or indeed accept that their BVM technique is poor, regardless of the clinical evidence to the contrary.

If patient survival is to improve then ventilation needs to be controlled. SMART BAG® provides that control without having to change the way in which you were taught to bag.

References:

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