


Response

I agree with your opinion that unsuccessful outcomes after successful CPR are in part due to impaired cerebral function caused by ischemic brain injury. Epinephrine is currently a suboptimal drug for CPR and needs to be evaluated further. The problem is how to reduce or avoid the adverse effect of epinephrine during and after CPR. If possible, we should do our best to search for a better therapeutic drug for cardiac arrest.

Lu Xie DPharm
Department of Physiology
School of Pre-Clinical Sciences
Guangxi Medical University
Nanning 530021, PR China

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An easy method to administer drugs into the trachea via the intubating laryngeal mask airway

To the Editor,

The laryngeal mask airway (LMA) is a supraglottic airway device used to maintain an airway and provide positive pressure ventilation [1]. Because the LMA provides access to the larynx and trachea, its potential use as a route of drug administration is apparent. Salbutamol and surfactant have been delivered via the LMA, and desired therapeutic goals have been achieved [2,3]. Previous studies have shown that drug administration via the LMA resulted in lower plasma concentration than drug delivery into the trachea [4,5]. However, if a catheter is passed through the LMA into the trachea for drug administration, the equivalent plasma concentration and therapeutic effect of the drug are achieved [5]. However, Alexander et al reported only a 27% success rate associated with passing a catheter into the trachea via the LMA [6].

The intubating laryngeal mask airway (ILMA) is a modification of the LMA designed to enable blind tracheal intubation [7]. A high success rate (67% success with “blind” first attempts in inexperienced intubators) has been reported [8]. Therefore, we conducted a manikin study to investigate if a catheter could be passed blindly via an ILMA into the trachea. Twenty-five emergency physicians and 25 nurses participated in the study. The emergency physicians and nurses worked in the emergency department (ED) of the Chi-Mei medical center with an annual admission volume of more than 120000 patients. All emergency physicians were familiar with the use of the ILMA. All of the nurses had trained for ILMA insertion, but none had previously used the technique. An Ambu Airway Management Trainer instructed all participants in the present study.

The training course involved an initial 5-minute oral lecture followed by the instructor’s demonstration. The procedure involved inserting an ILMA (LMA Fastrach, size 4), inflating 30 mL of air into the cuff of the ILMA, and introducing a catheter (MADett; Wolfe Tory Medical, Salt Lake City, UT) through the ILMA into the trachea of the manikin. The insertion of the ILMA was performed according to the technique described by Brain [9]. If any resistance is encountered as the catheter is advanced, the handle is used to gently lift the ILMA 2 to 5 cm until any resistance is diminished. The catheter is then carefully advanced until the entire catheter is inserted. Each of the participants had one opportunity to practice the procedure. The instructor would then indicate the pitfall of the participants’ insertion technique during the practice session. After the training course, the participants inserted the ILMA and the catheter. The time taken from first handling the device to insertion and complete introduction of the catheter was recorded. Failure to perform the technique correctly
occurred if the catheter tip was located in any place other
than the trachea or if the participant failed to insert the
catheter within 3 minutes. Statistical analysis of the success
rate was performed using the Fisher exact test. The insertion
times of the 2 groups were compared by the Wilcoxon rank
sum test. A value of $P < .05$ was considered significant.

Three of the 25 emergency physicians and one of the 25
nurses failed to perform the technique correctly. All those
who failed misplaced the catheter into the esophagus.
Success rates were high in both experienced and inexper-
ienced intubators ($88\%$ vs $96\%, P = .609$). The insertion
time for emergency physicians ranged from 10.57 to 44.52
seconds (mean, 19.85 seconds). The insertion time for
nurses ranged from 11.01 to 43.82 seconds (mean, 20.06
seconds) (Fig. 1). There was no difference observed between
these 2 groups ($P = .691$).

The ILMa is an airway device derived from the LMA. Its
reported insertion rate is faster, and it has a better success rate
than that of the LMA and tracheal tube placement by
experienced operators [1]. The ILMa includes a guiding
ramp to direct the catheter into the trachea as it emerges from
the mask aperture. Furthermore, there are no bars across the
opening of the ILMa; thus, the catheter will not impinge on
the mask aperture. These features facilitate the passage of a
catheter via the ILMa into the trachea. Thus, paramedics
could use the ILMa for airway control and insert a catheter
into the trachea via the ILMa to provide a route for drug
administration. In prehospital situations, getting intravenous
access and tracheal intubation usually delay the timing of
resuscitation. Herein, both experienced and inexperienced
operators demonstrated a high success rate after a short
training course. All participants completed the procedure
within 45 seconds. However, although the present study was
a manikin study, the potential of such a technique for drug
administration during resuscitation is shown. This method is
easy to learn, is fast to perform, and does no harm even if the
tube is misplaced. Further studies are required to verify the
feasibility of the route used in human and the pharmacologic
effect after drug administration.

Chin-Kun Liao MD
Hung-Jung Lin MD, MBA
Kuo-Tai Chen MD
Department of Emergent Medicine
Chi-Mei Hospital, Liouying
Tainan 710, Taiwan
E-mail address: 790001@mail.chimei.org.tw

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Trauma center car bumper stickers for many patients
receiving trauma care

To the Editor,

Laura Landro speaks eloquently about a dangerous gap in
trauma care in her editorial in the Wall Street Journal [1]. She
indicates that trauma from injuries including accidents, falls,
and violence is the leading cause of death for Americans
younger than 44 years, accounting for more than 140,000
lives and permanently disabling 80,000 people annually. She
points out that only 1 in 4 accident victims living in an area
served by a coordinated system is able to transfer patients to
designated trauma centers from less equipped hospitals

Fig. 1 Every point indicates the insertion time of every
participant. Emergency physicians represent experienced intubators, and emergency nurses represent inexperienced intubators.