The use of the i-gel supraglottic airway in pre-hospital resuscitation

The i-gel (figure 1) is an innovative 2nd generation supraglottic airway with a soft, gel-like, non-inflatable cuff. The i-gel is designed to create a non-inflatable anatomical seal of the pharyngeal, laryngeal and peri-laryngeal structures. It incorporates a gastric channel to provide an early warning of regurgitation, facilitate venting of gas from the stomach, and to allow for the passing of a suction tube to empty the stomach contents. A bite block and epiglottic rest are also integrated into the device. The large diameter cylindrical airway tube is contained within a buccal cavity stabiliser, which is anatomically widened and concaved to eliminate the potential for rotation and provide vertical strength for insertion [1].

Clinical evidence related to use of i-gel in CPR

Initially, i-gel was only indicated for use in routine and emergency anaesthesia. However, the indications for use were extended to include resuscitation following publication of studies reporting easy and rapid insertion [2-5], high seal pressures [3,6,7], minimal training period to enable safe use [5] and insertion by non-anaesthetists [2,4]; and extended further in 2011 to include use as a conduit for intubation with fibre optic guidance.

Reported use of i-gel during cardiac arrest

Jasmeet Soar published the first reported use of i-gel during cardiac arrest in 2007, which confirmed easy ventilation of a patient’s lungs with the i-gel connected to a self-inflating bag-valve device. He also confirmed the patient’s lungs were ventilated asynchronously during chest compressions with no leak. The i-gel was used for approximately 10 minutes with no clinical evidence of aspiration [8].

To date, the most recent and comprehensive data on the use of i-gel during cardiopulmonary resuscitation is a report by Larkin, D’Agapeyeff and Gabbott in 2012 on 100 uses of the device as part of airway management during hospital based CPR. Insertion of the i-gel by 49 nurses, 47 junior doctors and four Resuscitation Officers resulted in 99/100 devices being successfully inserted on the first or second attempt, and only one failure to insert. The authors concluded by stating that ‘as a result of our first 100 i-gel insertions, the device has now become our ‘first line’ supraglottic airway device of choice during the initial phase of CPR whilst the Resuscitation team is summoned’. [9].

The i-gel O2 Resus Pack

The i-gel O2 Resus Pack (figure 2), the newest addition to the i-gel product range, contains a modified i-gel with a supplementary oxygen port. It also includes a sachet of lubricant for quick and easy lubrication of the i-gel O2 prior to insertion.

The evidence currently available suggests i-gel has many attributes required of an airway device for use during pre-hospital resuscitation, including easy and rapid insertion, high seal pressures, minimal training period to enable safe use and a mechanism for managing regurgitant fluid. The new i-
gel O₂ Resus Pack provides additional benefits, including the option of delivering passive oxygenation through the supplementary oxygen port. Further clinical studies on the use of i-gel in pre-hospital resuscitation and on the use of the i-gel O₂ for the delivery of passive oxygenation are awaited.

References