Arsenal ResQFoam™ for non-compressible abdominal haemorrhage

TIMEFRAME: Estimated earliest commercial availability in the UK

| Currently unclear | Now | 6 months | 1 year | 18 months | 2 years | Over 2 years |

ResQFoam™, developed by Arsenal Medical, is an injectable foam that expands rapidly and molds to organs to slow bleeding from a non-compressible abdominal haemorrhage.

Following diagnosis of intra-abdominal bleeding, abdominal access is achieved using a standard open access technique. A delivery device is then used to mix two liquids with subsequent injection of the mixture into the abdominal cavity. Within about one minute the foam mixture expands to nearly 30 times its original volume and solidifies to slow/halt haemorrhaging by helping to seal wounded tissues. Once the patient is in the operating theatre the material can be removed and surgery performed to permanently stop bleeding.

CE marking and launch timeframes are confidential at present.

**Similar technologies in development:**

**Hemogrip™ Foam (Remedium Technologies)**

Hemogrip™ is a sprayable foam. According to the company, when it is applied to a wound it expands and creates a mesh which adheres to tissue, coagulates blood and stops bleeding within minutes. The company states that Hemogrip™ can be removed quickly by using Hemogrip™ Reverse, a sprayable solution which gently releases Hemogrip’s interaction with damaged tissues and allows surgeons to access the wound. Hemogrip™ is under development and is not commercially available.

**Injectable Foam (John Hopkins University)**

Researchers have developed an injectable foam system designed to stop bleeding from a wound at the junction of the torso and extremities, such as the groin. The technology is not applicable to closed-cavity abdominal haemorrhage. The injector is about the size of a whiteboard marker. The foam expands to fill the wound. It then hardens and applies pressure to the walls of the cavity. A prototype has been developed.
POTENTIAL FOR IMPACT

Uncontrolled post-traumatic haemorrhage is the leading cause of potentially survivable death from trauma. Abdominal haemorrhage usually involves injury to the spleen, liver, or retroperitoneal vasculature. It is typically non-compressible, as it cannot be managed by external compression or the application of tourniquets or topical dressings. Abdominal haemorrhage can rapidly lead to death by exsanguination (extensive blood loss) prior to care in the hospital, so the immediate control of bleeding is crucial to maintain survival.

Currently, there are no widely available and effective pre-hospital interventions for traumatic, internal abdominal bleeding, other than rapid access to surgical care. The company claims that ResQFoam™ has the potential to reduce pre-hospital death and prolong survival for the most severely injured patients. One potential use for ResQFoam™ might be with specific injury patterns such as solid organ or venous injury, as well as catastrophic haemorrhage in a pre-hospital setting. Further work is likely to be needed to assess whether the pressure required to tamponade intra-abdominal blood flow may cause tissue bruising or ischaemia, as well as how allergenic the foam might be to some patients. The need for ambulance and hospital staff to have additional training, will also require careful assessment.

The technology is predicted to have an impact on the following domain of the NHS Outcomes Framework (see: www.england.nhs.uk/resources/resources-for-ccgs/out-frwrk): Domain 1 Preventing people from dying prematurely.

EVIDENCE

PUBLISHED PAPERS AND ABSTRACTS


COMPANY INFORMATION

Arsenal Medical is planning first-in-human use of ResQFoam™ in 2016.

INFORMATION FROM

This Alert is based on information from the company and a time-limited internet search.