



the

PAIR

bulletin

Patient Public advisors for Injury research

Project Update

The Centre for Trauma Sciences has an active programme of research. This month's bulletin provides an update on current and previous research. There is a good overview of bleeding and clotting research available [here](#).



REWIRE is a randomised, blinded, controlled, study to evaluate the safety and benefit of administering a drug called Regadenoson to patients with critical injury and signs of haemorrhagic shock. REWIRE is investigating whether treating patients with Regadenoson before they get to hospital protects their heart following major injury. In the first phase the drug was given in small amounts to 9 male patients. The dose was slowly increased under close observation with outcomes monitored for safety. Phase 1 is now complete and approved fully for safety at the indicated dose and Phase 2 is about to begin. 98 patients will be randomised to receive either an injection of Regadenoson with standard care, or standard care alone. We hope the results of this research will improve the care for patients who suffer severe injuries in the future.



The **SWIFT** trial is led by NHS Blood and Transplant (NHSBT) and will involve 10 air ambulance charities across the country.

Some Air Ambulances currently carry blood products to give to people at the scene of accidents. In the SWIFT trial they will also carry whole blood. This is blood as it taken from the arm of a donor. It includes all the different blood components together, such as red blood cells, plasma, and platelets.

Previous studies, including on military casualties in Afghanistan, have indicated whole blood could have better outcomes for trauma patients, including a greater chance of survival.

Whole blood may work better because it contains platelets. Platelets are the cell fragments which help the blood to clot. Platelets are difficult to store – they have a short five-day shelf life, must be stored between 20C and 24C, and need constant gentle movement to help them stay oxygenated. This means they are very difficult to use outside of hospitals.

Carrying and transfusing one blood product could also be lighter and simpler. It could enable faster treatment, at a time when every minute counts. And it could make the transfusion process easier and reduce risk, a crucial benefit in difficult and fast-moving incidents.

There is already evidence that whole blood could lead to reduced mortality and reduce the amount of blood needed after patients arrive at hospital. However, only a full randomised controlled trial such as SWIFT can provide the definitive answers.

ACIT SWIFT is running in parallel with the SWIFT study. it will add patients from the SWIFT trial to the long running ACIT study. The ACIT SWIFT study uses a blood sample (taken on admission to hospital), combined with some of the data collected in the SWIFT study to help us improve the care of patients who suffer serious injuries (trauma).

ACIT Swift began in January 2023 in Royal London Hospital and so far, has included only 4 patients but as time goes on, the number of sites will grow in conjunction with the opening of SWIFT study sites and we aim to have a total of over 300.

Meet the researcher



Charlotte Lindsay

Existing treatments for traumatic brain injury aim to avoid factors such as low blood pressure or low oxygen that can develop because of the injury and worsen the damage, but few treatments target the injury directly.

For patients with other injuries, the discovery of a blood clotting problem called trauma induced coagulopathy has led to new treatments and significant improvements in outcomes. Research has shown that patients with brain injuries also have problems with blood clotting when they arrive at hospital but the risk factors for trauma induced coagulopathy don't seem to be present, suggesting these problems may be different. Although we don't fully understand this yet, some recent studies have shown that treating blood clotting improves outcomes in patients with brain injuries, offering hope for more effective treatments.