TCS/19/27 - Exploring the role of histones and histone-like proteins in coagulopathy and vascular leak in meningococcal disease in children: a potential biomarker or target for adjunctive treatment?

Sepsis causes 3500 deaths in Scotland every year. One of the deadliest forms is meningococcal disease, which is associated with blood-poisoning spots that do not go away when pressed, and are feared by parents/healthcare professionals. These spots are caused by damage to blood vessels. Even after antibiotics they can continue to spread all over the body and patients can lose limbs or die. This project will investigate sticky proteins called histones, released either from our own cells or from bacteria, that our data suggest may cause this blood vessel damage. We will use a unique archive of stored blood and skin biopsies from children with meningococcal disease to study whether histones are released and stick to blood vessels. If true, detecting histones may be a quick way to diagnose sepsis early. Furthermore, treatments that can block histones could reduce death and disability in children and adults with sepsis.