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Editorial

Blood Transfusion: Beginnings and Some Current Problems

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DESCRIPTION

During the Enlightenment the English and the French vied with other to be the first to establish blood transfusion in humans. The most well-known were the English surgeon/anatomist was Richard Lower and the French physician Jean-Baptiste Denys. They were members of the Royal Society and the French Academy of Science, respectively. Progress in blood transfusion had been stimulated by a fellow of the Royal Society. William Harvey's written description of the circulation of the blood. However Harvey's was not the first description and of course his work was predicated on the previous observations of Vesalius, Colombo and the little known Arab physician Ibn al-Nafis. Erastratus, in Alexandria (1213-1288 BC) also described the heart as a pump and the ancient Chinese understood that blood circulated around the body [1]. It is somewhat curious to us now that the idea of transfusion of blood to correct blood loss and save lives was not to become widespread until the Spanish Civil War and World War II. Earlier physicians advocated blood transfusion to correct mental illness and even contemplated its use to cure marital disharmony!

Modern altruistic blood transfusion was greatly influenced, at least in the UK NHS, by the book of RM Titmuss, 'The Gift Relationship from Human Blood to Social Policy' in 1970 [2]. The development of blood transfusion services during the Spanish Civil War and WWII has been well aired. However the importance of the invention of the plastic bag for collection and delivery of blood by Carl W. Walter, a surgeon at Harvard Medical School and William Murphy Jr, a physician and inventor of medical devices in the early 1950s, is perhaps not so well known. This development revolutionized blood transfusion and was the forerunner of a system we now take for granted. New inventions, however, can take a long time to be implemented and the use of the plastic bag was not widespread in the NHS in the UK until the 1970s [3]. Current blood transfusion practice in developed countries depends, to a large extent, on altruistic donation. Ever since the HIV debacle, blood donors have been carefully monitored for possible transmittable pathogens. Blood donation by gay men is a contested area but many blood transfusion services rely on deferment for a limited time, together with NAT testing [4], which has certainly improved the situation.

What has been the impact of the SARS-CoV-2 Pandemic on blood transfusion? Well, like everything it is complicated. During the pandemic people were told not to leave their homes unless absolutely necessary. This advice resulted in fewer people going to blood donation clinics. Attendance at donor clinics, with many people, caused donor fear of becoming infected. The Irish Blood Transfusion Service solved the problem by use of an appointment system. In North America, according to the media, surgical operations had to be postponed because of a lack of blood [5]. In Haemopoietic Cell Transplant Centres (HCT) the problem has been addressed by cryopreserving all products, albeit with a loss of haemopoietic cell progenitors. It is of some interest that the % age of donors in developed countries seems fairly static at 5% of potential donors, in spite of clamouring for more chemotherapy and sophisticated surgical procedures. Indeed support for patients receiving chemotherapy now outdoes the need for blood and blood product support compared to surgical procedures. Perhaps increasing the age limit for donation might help to increase this % age.

Most hospitals and clinics have transfusion committees and blood usage has dramatically decreased. The decision to offer a patient a blood transfusion is now taken with more care than was previously the case. Although guidelines are in operation in most hospitals there is concern in some quarters that the use of guidelines, alone, might inhibit critical thinking [6] among young doctors. The effects of the SARS-CoV-2 pandemic are protean but one particular issue is placentitis during pregnancy. Most obstetricians now, advise vaccination for all women of childbearing age and for those who are pregnant. Widespread misinformation in social media has contributed to vaccine hesitancy and has resulted in a wide difference in vaccination rates between many European countries and many parts of the USA [7]. Hopefully with the end of the current pandemic, life will return to normal, the % age of blood donors will increase in the eligible population and chemotherapy and surgical procedures will continue.

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