

THE TECHNOLOGY OF DETECTION OF STORED BLOOD QUALITY

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Blood transfusion is a procedure used in clinics for patients that undergo an operative intervention. Blood banks now consider six weeks to be the maximum permitted storage time of blood for use in transfusion, but recent studies have suggested transfusing blood stored for more than a few weeks has adverse effects in patients undergoing cardiac surgery or critical care. We propose to extend the new methods estimation of stored blood quality.

High concentration of glucose in blood storage medium promotes glycation and causes HbA1c and glycating compounds derived from glucose values to increase over time, which would predict that uncontrolled glycaemia leads to the formation and accumulation of advanced glycation end-products. In addition, nitric oxide is also important for delivery of oxygen by hemoglobin. Red blood cells carry nitric oxide bound to hemoglobin, and play a critical role in recycling the nitric oxide. Over time in storage, the nitric oxide is lost.

This method of detection of blood quality will a substantial effect on blood use. Management of blood storage will make medical sense and good economic sense.