SYNTHETIC BLOOD SAVES A LIFE

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EMILY BOURKE: A Melbourne doctor has saved a woman's life by using synthetic blood.

The product which is derived from cows' blood has largely been experimental until now and it's the first time it's been used in a life and death situation.

There are predictions synthetic blood will change the way doctors think about trauma medicine.

Simon Lauder reports.

SIMON LAUDER: After a horrific car crash in October, Victorian woman Tamara Coakley ended up in Melbourne's Alfred Hospital.

She had massive blood loss but as a Jehovah's Witness she wasn't able to accept a regular blood transfusion.

When her condition started getting worse the head of trauma at the hospital Mark Fitzgerald had to find an alternative.

MARK FITZGERALD: She needed some blood but for religious reasons couldn't accept a blood transfusion. So we were able to get hold of some synthetic blood.

It has been used on other patients before but none of them have been at risk of absolute death if they hadn't received the product which she was.

SIMON LAUDER: Several years ago Dr Fitzgerald helped the US Navy trial a synthetic blood product. When he ran out of options to save Tamara Coakley's life he called a company which had just started manufacturing the blood again. They only had 10 units ready to go and they sent him all of it.

MARK FITZGERALD: Unbelievably lucky. Just unbelievably lucky.

SIMON LAUDER: Scientists have been trying to develop a viable blood substitute for many decades, focusing on the ability of red blood cells to carry oxygen. The synthetic products are known as haemoglobin-based oxygen carriers or HBOC.

The product Dr Fitzgerald used HBOC-201 is derived from cows' blood. It doesn't have to be matched to individual blood types and can be stored for years.

He says it could be revolutionary.

MARK FITZGERALD: Blood loss is still one of the commonest reasons people die after injury. We just accepted it is part of the status quo that sometimes you couldn't get on top of things. And now we've got this other option so it's something that I just hadn't imagined you know a couple of decades ago.

SIMON LAUDER: Up until now the use of the synthetic blood has been largely experimental and Dr

Fitzgerald says it's still not as good as human blood.

MARK FITZGERALD: When it was trialled against human blood in orthopaedic surgery older patients did worse with the synthetic blood and there was a higher incidence of heart related problems. And so it's recommended you can only use it on younger patients under the age of 70-odd.

But those patients weren't shocked and weren't bleeding to death.

SIMON LAUDER: Developments in synthetic blood have come a long way in recent years. Scientists in the US have used embryonic stem cells to grow human blood.

Researchers in the UK are using similar methods in a project which aims to manufacture blood on an industrial scale.

The president of the Australian Society of Blood Transfusion Dr Erica Wood says it will be a long way before synthetic blood can replace donor blood.

ERICA WOOD: We've got a great need for voluntary blood donors for the foreseeable future. The safety of these agents is not established in large scale clinical trials.

The need for transfusion support is not just limited to red blood cells and we need platelets, plasma, other things made from blood that are absolutely dependent on voluntary blood donors now and for the foreseeable future.

SIMON LAUDER: Synthetic blood based on haemoglobin would guarantee disease free transfusions. It would also revolutionise battlefield medicine.

But Dr Wood says people with immune deficiencies and autoimmune disease still have no alternative to donated human blood.

ERICA WOOD: Research into alternatives to plasma derivatives and platelet transfusions are also underway and hopefully will bear fruit in the future.

SIMON LAUDER: For now though Dr Mark Fitzgerald is hoping the synthetic blood that saved Tamara Coakley's life will be made available in Australia to give trauma hospitals an alternative to the real thing.

EMILY BOURKE: Simon Lauder.

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