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COMBAT Research Study

Control **o**f **M**ajor **B**leeding **A**fter **T**rauma

The benefits of giving plasma early to traumatically injured patients

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www.DenverHealth.org/COMBATstudy

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Sponsored by:

- The United States Department of Defense's Telemedicine and Advanced Technology Research Center (TATRC)

How is this study different from other research studies?

- This proposed research study is different because it involves enrolling patients that cannot give consent and the treatment must be given immediately after injury.
- In order to do this study without initial consent, we must consult the community and inform the public of this study before the study will be approved or started.
- Subjects will be enrolled into the study without their consent unless they have opt out items that can be easily seen.

A Need for Improved Outcomes

- Preventable death due to uncontrolled bleeding is responsible for:
    - Greater than 40% of civilian deaths
    - Greater than 80% of military trauma deaths
        - 33% with arm/leg injuries
        - 50% with chest/abdomen injuries
        - 20% with groin/neck/shoulder injuries

There is a Need for Trauma Research

- Trauma is leading cause of death among Americans ages 1-44
- More than 160,000 trauma patients die each year in the US
- Many of these patients die because we cannot stop the bleeding
- In comparison, heart disease caused almost 600,000 deaths in the US and influenza and pneumonia caused almost 54,000 deaths

What is coagulopathy?

- Uncontrolled bleeding
- 1/3 of severely injured trauma patients arrive to the ED with defective clotting
- Plasma clotting factors may be used up
- Treatment? Give Plasma.
- Plasma contains clotting factors.

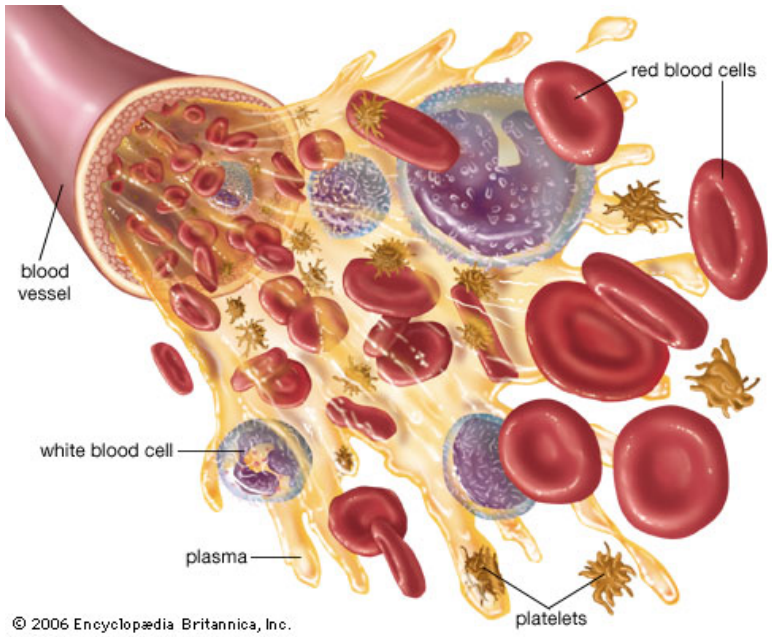
What is the standard of treatment?

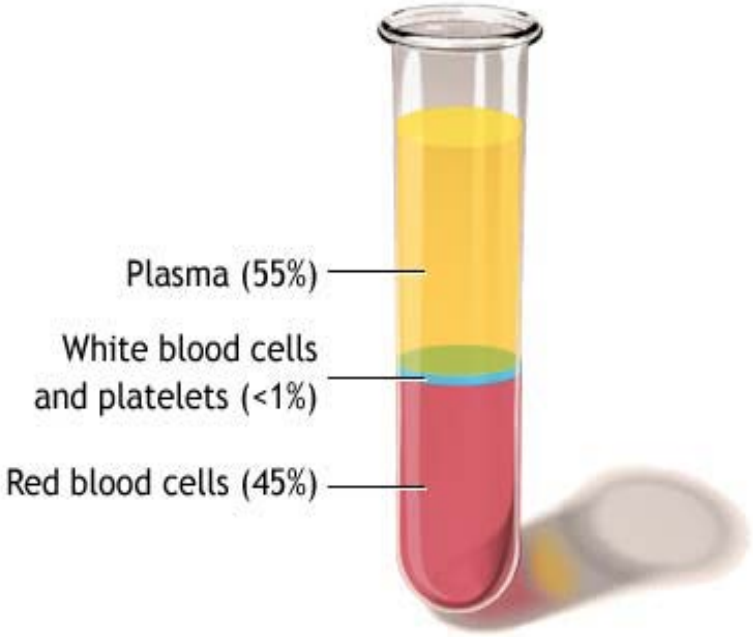
1. Normal Saline (Sterile Salt Water)

2. Transfusion of Red Blood Cells

3. Transfusion of Plasma

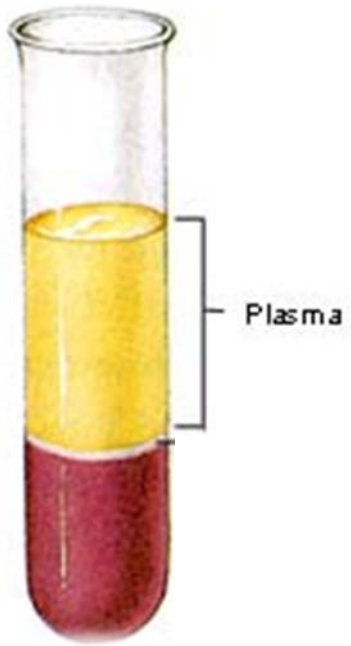
What are the components of blood?





What is Plasma?

- The liquid portion of blood without cells
- Contains numerous proteins needed for clot formation to stop bleeding
- Maintains the blood volume inside blood vessels (supports blood pressure



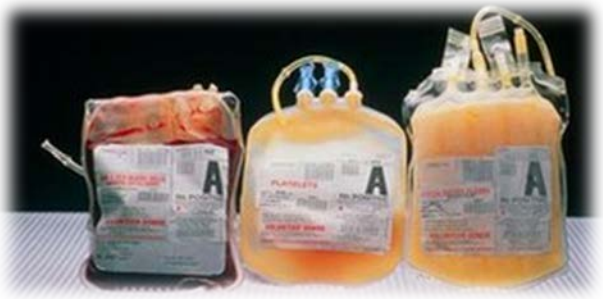
How do you get Plasma?

- Fresh Frozen Plasma from human donors within 8 hours
- **AB-FP24 from human donors frozen within 24 hours**

- Regulated by FDA
  - Selection of appropriate donors (pre-screened)
  - Testing (HIV, Hepatitis negative)
  - Processing and storage

How is Plasma used in Trauma?

- Given to patients to treat uncontrolled bleeding
- Provide clotting factors to stop bleeding
- Usually given with red blood cells
- Improve blood pressure
- Decrease amount of blood products transfused
- Improve survival and prevent organ failure



Purpose of Study

- To see if giving thawed AB-FP24 earlier to trauma patients will help stop bleeding
- Beginning in the ambulance versus after arrival to the hospital.

Trial Design: Before the Hospital

- Severely injured trauma patients will be assigned to either one of two groups at **random**.

50% Standard Group: Receive salt water as first treatment fluid

50% Experimental Group: Receive AB-FP24 as first treatment fluid

Standard vs. Experimental Group

Standard	Test
1. Normal Saline	**1. Plasma Transfusion**
2. RBC Transfusion	2. Normal Saline
3. Plasma Transfusion	3. RBC Transfusion

The difference is that PLASMA is given FIRST
in the Experimental Group.

Information about you that will be collected:

- Blood samples and the data with the samples
- Name and demographic information
- Portions of any previous and current Medical Records related to this study
- Hospital stay and research test records

Potential Benefits of Early PLASMA

- There is a 1 in 4 chance of dying based on the heart rate and blood pressure criteria.
- Early plasma could increase the likelihood of survival.
- Natural (not artificial) blood volume expander
- Contains the essential clotting factors needed to stop bleeding
- May reduce the need for numerous blood transfusions
- May reduce the risk of organ failure

Potential Risks of PLASMA

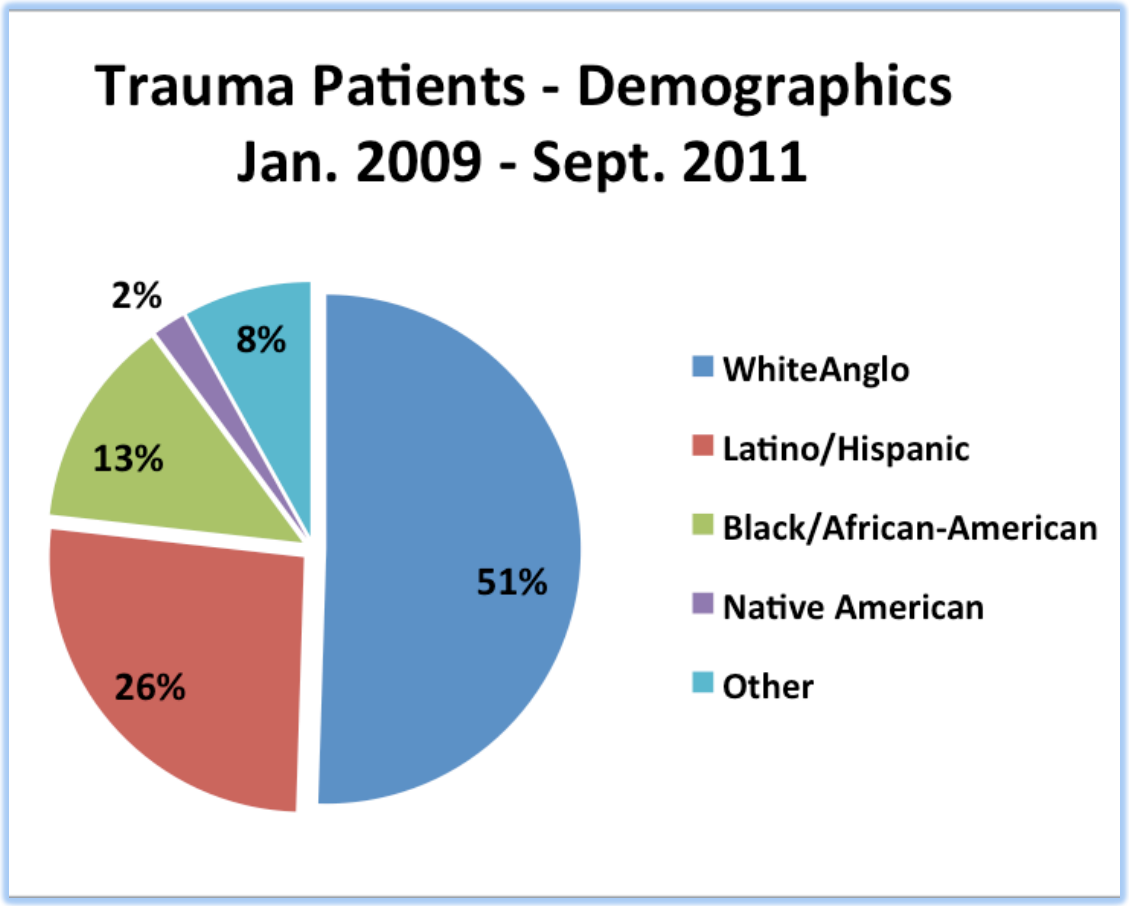
- Immune Reactions
  - Rash
  - Fever
  - Allergic Reaction
  - Transfusion-related lung injury
- Other reactions:
  - Infection (HIV, Hepatitis)
  - Hepatitis B: 1 in 282,000
  - Hepatitis C: 1 in 1,149,000
  - HIV: 1 in 1,467,000
  - Malaria: 1 in 4,000,000

There always remains the chance that plasma does not increase survival.

Who will be included in this study?

- Patients at risk of **dying from trauma (1 in 4 chance of death)**
- Have severe injuries
- At least 18 years old
- Lost a large amount of blood
- Transported by Denver Health Paramedics to Denver Health Medical Center

Who has this kind of trauma in Denver?



- 78 % male
- Average age: 38 (18-80 years)

- Less than 1 in 10,000 chance of enrollment each year

This study is done with an Exception From Informed Consent

- A federal regulation (21 CFR §50.24) allows studies without consent.
  - It is a life-threatening situation that needs urgent treatment
  - Patients cannot give consent because of the condition and the treatment must be given before a family member can be contacted.
  - The treatment being studied must also possibly help the patient.
  - The study cannot be done if a consent is required.

- It requires approval of:
  - Food and Drug Administration (FDA)
  - Colorado Multiple Institutional Review Board: Group of people not involved with the study whose main purpose is to protect human subjects of ANY study
  - DOD's Office of Research Protections, Human Research Protection Office

Right of Refusal

- Potential subjects may show their preference NOT to participate in this study by requesting and wearing:
  1. A bracelet stating " NO COMBAT STUDY"
  2. A necklace ID stating "NO COMBAT STUDY"

  These items can be requested *free of charge* from Denver Health, www.DenverHealth/COMBATstudy

- If a family member is present at the scene and not severely injured, easily accessible to paramedics, and the patient is not in immediate danger of death, the paramedics will ask the family member if there is any objection to enrollment by saying 'We are enrolling him/her in a research study where we are giving a blood product. We don't have time to explain the study at this time. Is this okay?' The paramedics will not be able to look for family members among a crowd of bystanders because of the importance of transporting the patient to the hospital as soon as possible.

Questions or Comments?

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