DISCLOSURES

NONE

WILL BE TALKING ABOUT NON – FDA APPROVED DRUGS – WILL LET YOU KNOW WHEN

NOT ENDORSING ANY PARTICULAR PIECE OF EQUIPMENT

TAC MED CONCEPTS

1. REMOTE DAMAGE CONTROL RESUSCITATION, BLOOD PRODUCTS AND EMS – A PERFECT COMBINATION?
2. FREEZE DRIED PLASMA: A FUTURE PART OF REMOTE DAMAGE CONTROL RESUSCITATION?
3. ICU IN A BAG – NOT POSSIBLE? OR IS IT? GEAR TO SUPPORT REMOTE DAMAGE CONTROL RESUSCITATION IN THE FIELD
AN EFFORT TO MINIMIZE OR CURTAIL DAMAGE OR LOSS
REMOTE = TIME/DISTANCE GAP
AN OUT OF HOSPITAL RESCUE STRATEGY INCLUDING BLOOD COMPONENT TRANSFUSION IS NECESSARY

1. RESOLVE IMMEDIATE LIFE THREATS
2. LIMIT IVF WHEN FEASIBLE/PERMISSIVE HYPOTENSION
3. RESUSCITATE WITH BLOOD/FFP/PLT 1:1:1 FASHION
4. CONSIDER TXA/FACTOR VII
5. MOVE TO FRESH WHOLE BLOOD WHEN NEEDED
6. KEEP THE PATIENT WARM
7. NORMALIZE THE PH
PLASMA FIRST PROTOCOL

Indications: Plasma product transfusion is a rational treatment of hemostatic shock. Plasma product transfusion is not indicated in non-hemorrhagic shock. In the following clinical scenarios, plasma product transfusion may be considered:

1. Inadequate response of crystalloid therapy: 1L low-molecular-weight dextrose in 1 liter saline
2. Plasma by volume ratio inadequate: 2:1
3. Persistent acidemia (pH < 7.2)
4. Persistent hypothermia (rectal temperature < 36°C)
5. Persistent hypovolemia (hematocrit < 25%)
6. Persistent signs of tissue hypoperfusion
7. Plasma component transfusion in severe coagulopathy

Figure 1: Mobile blood bank with thawed plasma protocol.

LOGISTICS

- TRAINED PROVIDERS
- BLOOD BANK SUPPORT
- TEMPERATURE CONTROL
- MECHANISM TO RETURN THAWED PLASMA (5 DAYS)
- TECHNOLOGY TO SUPPORT
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The Use of Fresh Whole Blood in Massive Transfusion

The first recorded instance of the use of whole blood transfusion was reported by Dr. Samuel Parr in 1799. Parr successfully transfused whole blood to a patient suffering from a severe hemorrhage. However, it wasn’t until the 20th century that massive transfusion became a common practice.

**WWI**
- Whole Blood

**WHOLE BLOOD TX**

**FREEZE DRIED PLASMA ABANDONED DUE TO HEPATITIS**

**POST WWI**
- Fractionation Therapy
- Warm Fresh Whole Blood
- Other Countries Freeze Dried Plasma

**CURRENT CONFLICT**
- Fractionation

**WASHINGTON POST Nov 1 2010**

Almost none of the improvement is the consequence of new drugs or new devices. Most of it, remarkably, involves old technology and old practices that fell out of favor in the past 50 to 100 years and have been rediscovered and improved.
FREEZE DRIED PLASMA (FDP)

1990 40K UNITS DELIVERED TO SUPPORT FRENCH MILITARY OPERATIONS

1994 FORMAL HEMOVIGILANCE PROGRAM (FLYP)

OBTAINED FROM <11 DONORS BY APHERESIS/LEUKOREDUCED 2003/ANTI HLA TESTED 2009/UV TREATED 2010

NO ADVERSE EVENTS SINCE 1994 (1100 USES)

OVERSEAS USE

FRENCH MILITARY BLOOD INSTITUTE

NOT US FDA APPROVED

JOURNAL OF TRAUMA DEC 2011

VOLUME 71, NUMBER 6

FDP: 2 YR SHELF LIFE/ROOM TEMP STORAGE

RECONSTITUTION TIME <6 MIN

UNIVERSALLY COMPATIBLE

ROLE III – AFGHANISTAN 2011

87 CASUALTIES/83 FDP TRANSFUSIONS

EASE OF USE/EFFECT COMPARABLE TO FFP/NO ADVERSE EVENTS

FDP: GERMAN PRODUCT, 1 DONOR

NOT FDA APPROVED
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Battle casualties

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Key Points:

"...miniaturization of diagnostic and treatment aids is assumed to fulfill the requirement for mobility"
ICU BACKPACK: A BAG
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