

Disseminated Intravascular Coagulation In Burn: A CASE REPORT



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BACKGROUND

Disseminated intravascular coagulation (DIC) is characterized by the overactive formation of blood clots and increased bleeding in the body generally due to a complication of another disease or clinical disorder that activates the coagulation cascade.

Severe burns present as risk factors in developing DIC.

This study presents a case of a patient who experienced a severe burn injury and DIC.

CASE PRESENTATION

The patient presented with sustained 50.5% Total body surface area (TBSA) burns status post an oilfield explosion involving a gas pipeline. Due to operative site hemorrhage the patient had to be taken back to the OR for emergent hemostasis management.

During this procedure, the patient continued to face challenges in hemostasis despite administration of multiple units of blood, platelets, Desmopressin, Cryoprecipitate, Fresh frozen plasma (FFP), and Factor VII.

DIC was attributed as a probable cause after consultation with the hematology team.

Throughout the patient's hospital course, Factor VII was the most helpful in controlling bleeding.

For operative procedures, aminocaproic acid was used to alleviate possible complications from fibrinolysis. Epinephrine soaked Telfa, laparotomy pads, fluff dressings, and Tubigrip was also used to achieve hemostasis.

The patient's active DIC resolved once his burn was excised in entirety. At discharge the patient's burn had recovered more than 35.5% in TBSA.

Event Name	Event Result
WBC	14.56 K/uL High
RBC	2.34 M/uL Low
Hemoglobin	7.2 G/DL Low
Hematocrit	20.6 % Low
MCV	88 fL
MCH	30.8 pg
MCHC	35 g/DL
RDW - SD	46.4 fL High
RDWCV	14.7 % High
Platelet	79 K/uL Low
MPV	11.6 fL
NRBC %	1.4 /100WBC High
NRBC Abs	0.2 K/uL High
Neutrophils	68.8 %
Lymphocytes	1.8 %
Monocytes	11 %
Eosinophils	0.9 %
Bands	9.2 %
Metamyelocytes	5.5 %
Manual Myelocytes	2.8 %
Cells in Diff	
NRBCs/100 WBCs	109 High
Absolute Neutrophils	12,901 K/uL High
Absolute Lymphs	0.3 K/uL Low
Absolute Monos	1.82 K/uL High
Absolute Eos	0.15 K/uL
Absolute NRBCs	0.3 K/uL
PT	9.7 sec
INR	0.85
PTT	24.1 sec Low
Platlet Function Analysis-Epinephrine	140 sec
HIT (PF4)	NEGATIVE
Sodium Level	147 MMOL/L High
Potassium Level	3.9 MMOL/L
Chloride Level	114 MMOL/L High
Carbon Dioxide	25 MMOL/L
Anion Gap without Potassium	8
Glucose Level	116 mg/dL High
BUN	21 mg/dL High
Creatinine	0.6 mg/dL

DISCUSSION

This case highlights a possible therapy protocol with demonstrated hemostasis and recovery for DIC presenting in a patient with severe burn injury involving greater than 50% TBSA.

The treatment for DIC is to address pathology that may be causing the DIC in the first place.

In this case, treating the burn injury while addressing the complications of DIC and bleeding through administering varying units of blood, platelets, Desmopressin, Cryoprecipitate, FFP, and Factor VII yielded the ability to discharge the patient home.

This combination of treating the burn injury and managing DIC complications together allowed for significant wound healing down to 15% TBSA for this patient just before discharge.



CONCLUSION

This is a rare diagnosis of DIC in a large area burn patient. This made for a complicated treatment plan given the large volume blood loss possible from excision and grafting of burn patients.

With the help from the hematology service, the patient was effectively treated with the appropriate blood products to complete the excision of his injury and abate active DIC.



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