

# citrate toxicity

(sīt' rāt tōks-ĭs' ĭ-tē)

## COMPLICATIONS

### DEFINITION:

A salt or ester of citric acid; used as an anticoagulant in blood products because it binds calcium ions. When large volumes of fresh frozen plasma (FFP), whole blood, or platelets are transfused rapidly, plasma citrate levels rise, binding ionized calcium and causing hypocalcemia.



### KEEP IN MIND:

Citrate is metabolized rapidly so these manifestations are transient.

### APPLICATION:

The patient in the ED with traumatic amputation of the left leg received 4 units of packed cells rapidly. The nurse was aware that this high rate of infusion could cause hypocalcemia,

### NOTES:

## COMPLICATIONS

### DEFINITION:



### KEEP IN MIND:

### APPLICATION:

which is caused by the liver being unable to metabolize the citrate; therefore, causing *citrate toxicity*.

### NOTES:

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# chylothorax

(kī"lō-thō' rāks)

## COMPLICATIONS

### DEFINITION:

Lymph accumulation in the thoracic cavity due to laceration or perforation of the thoracic duct during central venous catheter (CVC) insertion.



### KEEP IN MIND:

The chylous fluid is milky and usually on the left pleural space. If this should occur, remove the catheter, monitor vital signs, and administer oxygen. A chest tube may be necessary. This is a physician directed emergency.

### APPLICATION:

During the insertion of the subclavicular catheter a milky fluid (*chylothorax*) appeared on aspiration.

### NOTES:

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# cytomegalovirus (CMV)

(sī" tō-mĕg"ă-lō-vī rŭs)

## COMPLICATIONS

### DEFINITION:

A group of herpes viruses infecting humans and other animals.



### KEEP IN MIND:

Most infections are asymptomatic, but if symptoms are present, they manifest as mononucleosis-like illness. Congenital infection may cause malformation or fetal death; infection in immunocompromised persons may be life-threatening. May be transferred in blood transfusions.

### APPLICATION:

The low-birthweight neonate needed a transfusion of packed cells that had been screened for *cytomegalovirus*.

### NOTES:

# essential fatty acid deficiency

(ě-sěnt'shăl făt'ē as' ĭd dē-fĭsh' ěn-sē)

## COMPLICATIONS

### DEFINITION:

Deficit of the 18 carbon fatty acids that are nutritionally required by humans and must be consumed through dietary sources.



### KEEP IN MIND:

Occurs with prolonged total parenteral nutrition when fats are not included in regimen, which can be supplied as 10% or 20% fat emulsion by IV route.

### APPLICATION:

The total parenteral nutrition included 10% fat emulsion once per day to prevent *essential fatty acid deficiency* and provide extra calories.

### NOTES:

# febrile nonhemolytic transfusion reaction (FNHTR)

(fěb'ríl nǎn-hē"mō-līt-ĭk trǎns-fū'zhǔn rē-ǎk'shǔn)

## COMPLICATIONS

### DEFINITION:

A temperature increase of: 1°C associated with transfusions without any other explanation.



### KEEP IN MIND:

Occur in 0.5%-6% of red blood cell transfusions and are often accompanied by chills and fever. This is thought to result from an interaction between antibodies in the recipient's plasma and the antigen present on the transfused lymphocytes, granulocytes, or platelets.

### APPLICATION:

The nurse administered acetaminophen, per physician orders, to the patient whose temperature increased during the packed red blood cell transfusion to offset further symptoms of the *febrile nonhemolytic transfusion reaction*.

### NOTES:

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