



**Greenish plasma from a male blood donor: An Unusual Experience**

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**Abstract**

**Background:** Normally plasma is straw yellow colored, but finding green colored plasma from a male donor was something unusual. 32 yr old male donor, with no history of any medical illness was reported. Donor met all criterias of blood donation.

**Method:** 450 ml of collected donor’s bag was centrifuged in Cryofuge at 4000 rpm for 10 mins. Plasma was extracted using automatic plasma extractor. Donor was recalled and reassessed. There was no history of Sulphonamides or any drug intake. Blood sample of donor after taking consent were sent for investigations like S. ceruloplasmin , S. bilirubin Direct and Indirect , it was also sent for culture.

**Result:** No abnormality was detected in S. ceruloplasmin , S. bilirubin Direct and Indirect. Culture turned out to be normal also. But considering our blood bank’s policy of not issuing any discoloured blood product, plasma was discarded.

**Conclusion:** From this we concluded that Green coloured plasma is an interesting entity to study and it is safe to transfuse unless possibility of transfusing P aeruginosa are ruled out.

**Introduction**

Plasma is liquid part of blood straw colored normally, constituting 55% of total body volume. Plasma contains 95% water, proteins, glucose, clotting factors, electrolyte, hormones. etc. Plasma is yellow normally due to bilirubin, caretnoids, Hb and transferrin.[1] Finding green colored plasma is unusual. Fresh frozen plasma is fluid portion obtained from whole blood donation unit, after centrifugation within hours. FFP contains all coagulating factors like factor 5, factor 8 , fibrinogen, albumin, protein C & S except platelets. FFP is then obtained by freezing centrifuged plasma at -40° C or below. This case report is important because it gives us an approach towards discolored plasma and its implication in safe transfusion.

**Case History**

We report a case of 32 year old healthy male; weighing 82 kgs. His blood group is AB positive and Hb was 14g/dl. (By Hemo Cue method). He was inquired about any medical illness, past h/o drugs, surgery and vaccination. His routine medical examination was done, his BP was 122/86 and Pulse was 82 beats/ min. His consent for voluntarily donation was taken. 450 ml of whole blood was collected in Quadruple Top & Bottom

bag after taking proper aseptic precautions. Donated unit was centrifuged at 4000 RPM for 10 mins. Plasma was extracted using Automatic Component Extractor (Termo). Technologist found that greenish colour of plasma was something unusual.

The donor was recalled and detailed history was taken. The donor did not give any history of drug, allergies, rheumatic arthritis. He was specifically asked about sulphonamides. After taking proper consent, his blood samples were sent for culture, S. Bilirubin ( Direct and Indirect) and for S.Ceruloplasmin. The culture from the bag reported to be negative for Pseudomonas or any other pathogen.



Results from Clinical biochemistry were within normal range.

T.Bilirubin- 0.7 mg/dl

D. Bilirubin- 0.02 mg/dl

I.Bilirubin- 0.6 mg/dl

S. Ceruloplasmin- 22mg/dl

Urine was also sent for routine examination which was also normal.

### **Discussion**

Normally plasma is yellow in colour. There are reports of different colours of plasma, but green colour is less

frequently reported. There are different reasons cited for green plasma.

Among them are women on Oral contraceptive pills and patients of Rheumatoid Arthritis or on Sulphonamides. [2] Ceruloplasmin acts as a copper carrier and is an acute phase reactant.[3]

Tovey and Lathe established role of ceruloplasmin in green coloured plasma. Increase in ceruloplasmin occurs when copper levels are elevated in pregnancy, Wilson's disease, in long standing rheumatoid arthritis and in women on oral contraceptive pills.

Green coloured plasma is common in females but finding in male is something unusual and interesting.

According to Canadian blood services, green plasma is safe for transfusion.[4]

Green coloured plasma due to sulphonamide was reported by Flexman et al.[5]

In our case, donor gave no history of sulphonamides, no history or symptom of Rheumatoid Arthritis.

S.Ceruloplasmin , culture , S. bilirubin and urine routine microscopy was also normal. Hence, P.Aeruginosa is also ruled out. [6] We discarded the plasma though it was harmless owing to our blood bank policy. Some references suggest green coloured plasma has hypercoagulability. (Cotton et al.) [7]

### **Conclusion**

Discoloured plasma is interesting to study. It is quite evident that it is safe to transfuse if serious entities like P.Aeruginosa are ruled out.

### **Result**

No abnormality was detected in S. ceruloplasmin , S. bilirubin Direct and Indirect. Culture turned out to be normal also. But considering our blood bank's policy of not issuing any discoloured blood product, plasma was discarded.

### **Limitation**

However, effect of hypercoagulable profile of plasma on patient is not studied.

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