

“Comparative evaluation of blood salvage techniques in patients undergoing cardiac surgery with cardiopulmonary bypass”



Study Design

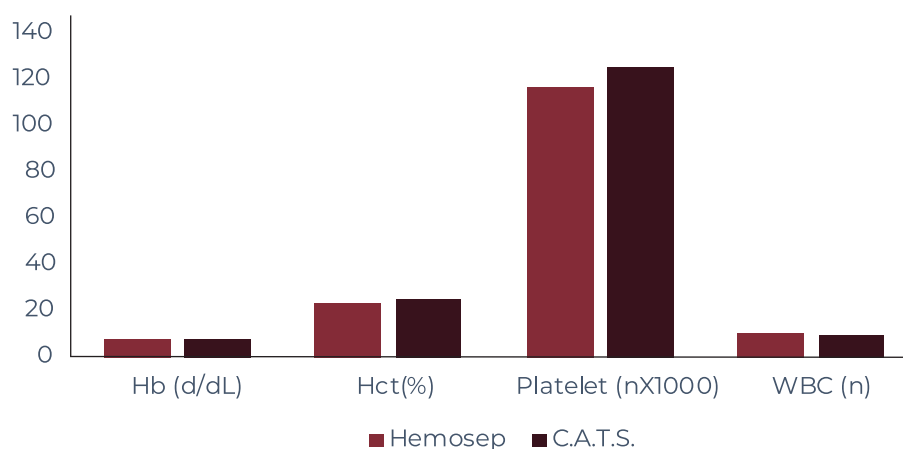
- A prospective, randomised trial to compare the Hemosep cell saver’s performance against conventional cell saver (C.A.T.S.)
- A total of 80 patients undergoing cardiac surgery on Cardio Pulmonary Bypass (CPB) were randomised into a Hemosep group or C.A.T.S. group in a Hospital in Turkey
- Samples taken to assess between baseline and post process values:
 - Full Blood Count
 - Activated Clotting Time (ACT)
 - Fibrinogen Levels
 - Standard blood biochemistry
 - Serum IL-6
 - Platelet function assessed using Rotational Thrombo Elastometry (ROTEM)



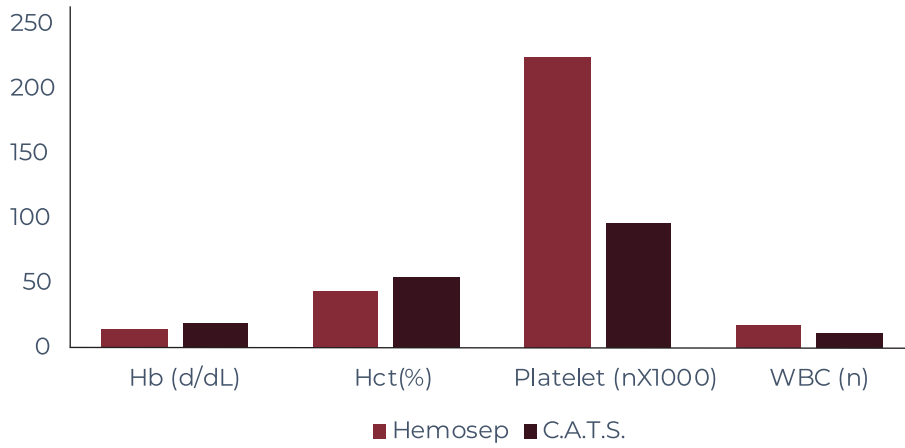
Key Results

- Hemosep was significantly better at concentrating platelet population
- C.A.T.S. had no effect on Albumin and Fibrinogen nor any effect on ACT
- Activated Clotting Time and IL-6 levels were significantly lower in the Hemosep group
- Neither device caused any changes in platelet activation demonstrated by ROTEM

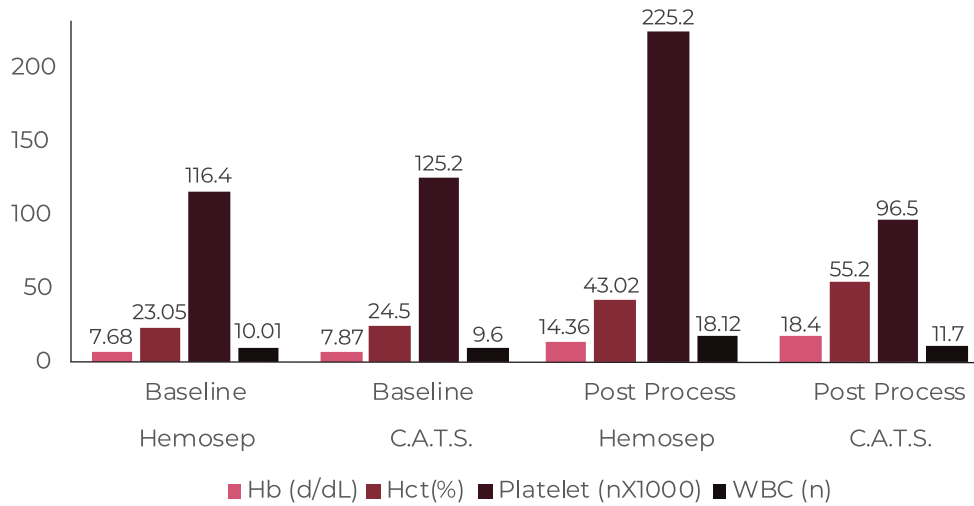
Baseline



Post-Process

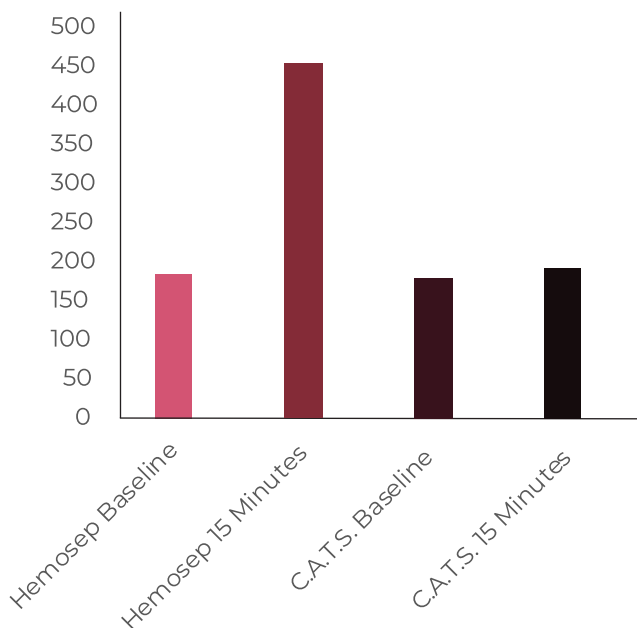


Concentration of Blood Elements

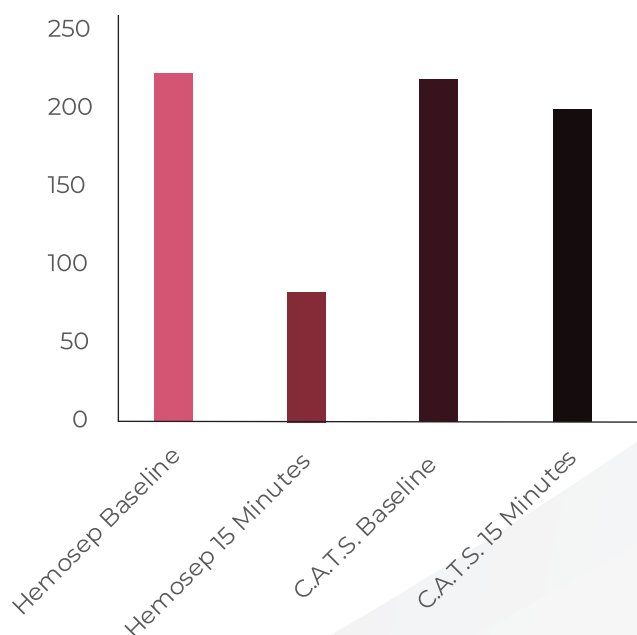


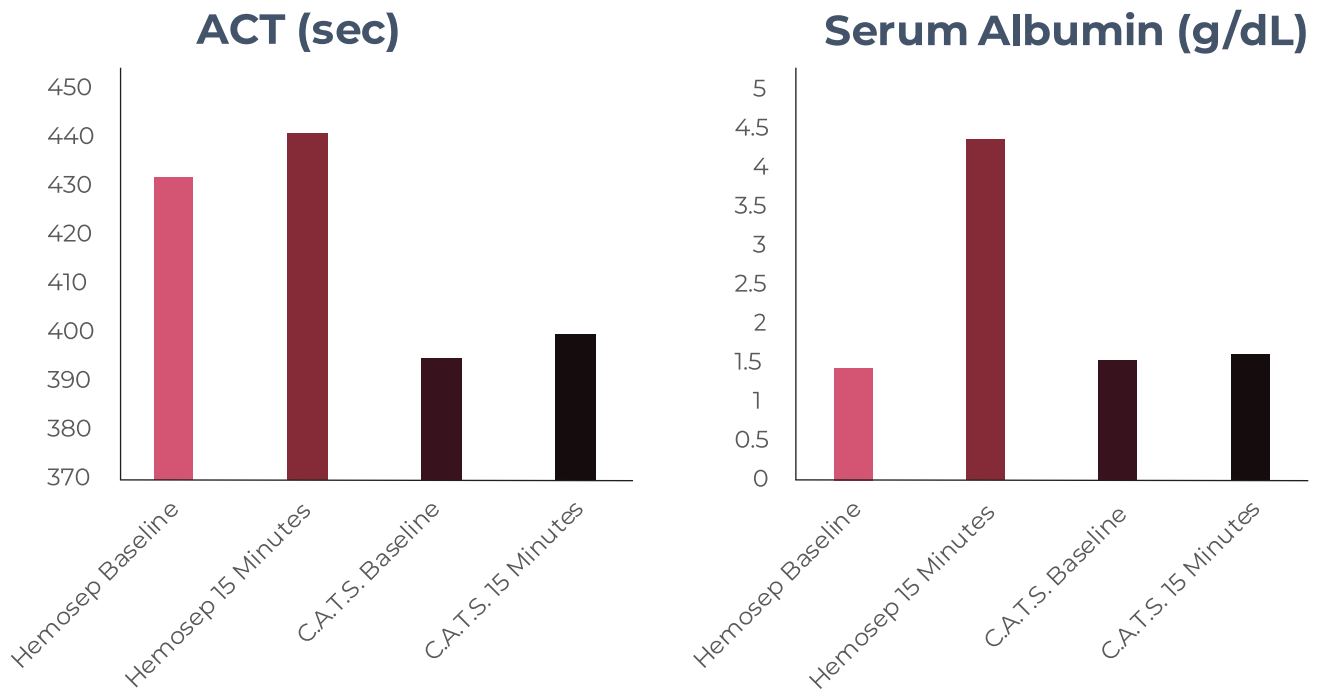
Impact on Protein Preservation

Fibrinogen (mg/dL)



Serum IL-6 (pg/dL)





Overall

- Traditional cell savers concentrate red blood cells well but are not very effective on platelet and protein preservation.
- Hemosep's resultant blood product was superior to that of the C.A.T.S. in terms of all species studied
- Fibrinogen is also concentrated in Hemosep and this is important in the CPB setting



Conclusion

- The Hemosep device functions as designed and without technical failures.
- Demonstrated that the cell-saver (C.A.T.S.) concentrates red blood cells very well, but is not effective in platelet and protein preservation.
- The resultant blood product from Hemosep was superior to that of salvaged blood in terms of all active cell species, suggesting some possible clinical advantage in its deployment.



Study Citation

Gunaydin S, Robertson C, Budak A, Gourlay T Comparative evaluation of blood salvage techniques in patients undergoing cardiac surgery with cardiopulmonary bypass : Perfusion. 2019;(2):105-109

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