- schoolchildren: an epidemiological study using the index of orthodontic treatment need. *Eur J Orthod.* 2006;28:605–609.
23. N'gom PI, Diagnea F, Dieyeb F, Diop-Baa K, Thiamc F. Orthodontic treatment need and demand in Senegalese school children aged 12–13 years – an appraisal using IOTN and ICON. *Angle Orthod.* 2007;77(2):323–330.
 24. Dhar V, Jain A, Van Dyke TE, Kohli A. Prevalence of gingival diseases, malocclusion and fluorosis in school-going children of rural areas in Udaipur district. *J Indian Soc Pedod Prev Dent.* 2007;25:103–105.
 25. Burden DJ, Holmes A. The need for orthodontic treatment in child population of the United Kingdom. *Eur J Orthod.* 1994;16:395–399.
 26. Nobile CGA, Pavia M, Fortunate L, Angelillo IF. Prevalence and factors related to malocclusion and orthodontic treatment need in children and adolescents in Italy. *Eur J Public Health.* 2007;17(6):637–641.

Journal Scan

J.J. Morrison, J.D. Ross, J.J. Dubose, J.O. Jansen, M.J. Midwinter, T.E. Rasmussen, Association of cryoprecipitate and tranexamic acid with improved survival following wartime injury: findings from the MATTERS II Study. *JAMA Surg* 148 (2013) 218–225.

Retrospective observational study was carried out at a Role 3 Combat Surgical Hospital in southern Afghanistan to quantify the impact of fibrinogen-containing cryoprecipitate in addition to the antifibrinolytic tranexamic acid on survival in combat injured patients. The study compared the mortality of 4 groups: tranexamic acid only, cryoprecipitate only, tranexamic acid and cryoprecipitate, and neither tranexamic acid nor cryoprecipitate. To balance comparisons, propensity scores were developed and added as covariates to logistic regression models predicting mortality. A total of 1332 patients were identified from prospectively collected U.K. and U.S. trauma registries who required 1 U or more of packed red blood cells and composed the following groups: tranexamic acid ($n = 148$), cryoprecipitate ($n = 168$), tranexamic acid/cryoprecipitate ($n = 258$), and no tranexamic acid/cryoprecipitate ($n = 758$). Injury Severity Scores were highest in the cryoprecipitate (mean [SD], 28.3 [15.7]) and tranexamic acid/cryoprecipitate (mean [SD], 26 [14.9]) groups compared with the tranexamic acid (mean [SD], 23.0 [19.2]) and no tranexamic acid/cryoprecipitate (mean [SD], 21.2 [18.5]) ($P < 0.001$) groups. Despite greater Injury Severity Scores and packed red blood

cell requirements, In-hospital mortality was lowest in the tranexamic acid/cryoprecipitate (11.6%) and tranexamic acid (18.2%) groups compared with the cryoprecipitate (21.4%) and no tranexamic acid/cryoprecipitate (23.6%) groups. Tranexamic acid and cryoprecipitate were independently associated with a similarly reduced mortality (odds ratio, 0.61; 95% CI, 0.42–0.89; $P = 0.01$ and odds ratio, 0.61; 95% CI, 0.40–0.94; $P = 0.02$, respectively). The combined tranexamic acid and cryoprecipitate effect vs. neither in a synergy model had an odds ratio of 0.34 (95% CI, 0.20–0.58; $P < 0.001$), reflecting nonsignificant interaction ($P = 0.21$). The authors from National Institute of Health Research, New Queen Elizabeth Hospital, concluded that the cryoprecipitate may independently add to the survival benefit of tranexamic acid in the seriously injured requiring transfusion. They also suggested that an additional study is necessary to define the role of fibrinogen in resuscitation from hemorrhagic shock.

Brig Man Mohan Harjai
Commandant, 166 Military Hospital, C/O 56 APO, 900277, India
E-mail address: harjai101@hotmail.com

Available online 20 August 2013

0377-1237/\$ – see front matter © 2013, Armed Forces Medical Services (AFMS). All rights reserved.
<http://dx.doi.org/10.1016/j.mjafi.2013.06.006>