news LETTER

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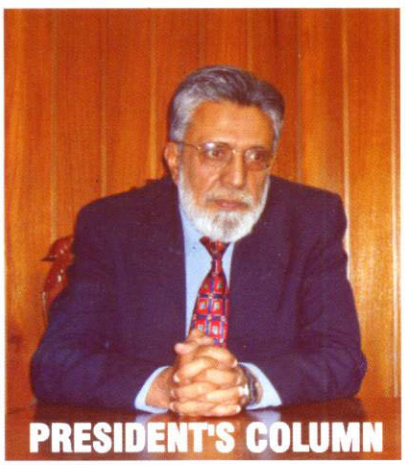
Pakistan Society of Haematology



I wrote the column in the previous Newsletter thinking that it is the last issue in my tenure of Presidency. I am now informed by the Secretary that I have to write yet another column. I really don't know what to write. Last week I attended the Postgraduate Course organized by Dr. Nisar at Children Hospital Lahore. I was delighted with the attendance but at the same time I felt sorry that many of the senior colleagues could not come. The success of such programmes, largely depend upon participation of the seniors. We must make all efforts to be present if we have committed once. Well there are exceptional circumstances when one may not be able to participate.

I would like to see more such events in other cities as well. We once started a 5 days course at AFIP but after eight courses it stopped. Time has come that AFIP should start it again. A similar programme in Karachi may take care of students in Sind and Baluchistan. Such activities will keep the Society live and kicking.

May Allah the almighty bless you all.

With regards,

Masood Anwar

Elections of PSH office bearers

Elections for PSH office bearers have been completed. We wish all the newly elected office bearers success in shouldering their responsibility. List of the newly elected office bearers is given below:

A. **President:** Prof Khalid Hassan
B. **President Elect:** Maj Gen Suhaib Ahmed
C. **Secretary/Treasurer:** Dr Nadeem Ikram

D. **Members of Executive Committee:**

Armed Forces:	(1)	Brig Muhammad Ayyub
	(2)	Brig Parvez Ahmed
Punjab:	(1)	Dr Tahir Jameel
	(2)	Prof Samina Naeem
	(3)	Dr Samina Amanat
Sind:	(1)	Dr Tahir Shamsi
	(2)	Dr Salman N Adil
NWFP:	(1)	Dr Akhtar Zarin Khattak
Baluchistan:	(1)	Dr Nadeem Samad Sheikh
Federal Areas:	(1)	Dr Tahira Zafar

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Optimum Use of Platelet Transfusions

Lt Col Qamar-Un-Nisa Chaudhry, Consultant Haematologist Armed Forces Bone Marrow Transplant Centre Rawalpindi.

Platelets represent a crucial part of haemostasis by contributing to maintenance of vascular integrity. Although the existence and their possible contribution to haemostasis was described in the 1870s, it was not until approximately 1970s that the routine availability of platelet transfusions became a reality when Murphy and Gardener provided evidence that platelets could be stored at 22 $\pm$ 2° C for up to 3 days while maintaining their haemostatic function[1]. Subsequent improvements, including the availability of improved storage containers, enabled the provision of platelets for transfusion after 5 or even 7 days of storage. At the present time the possibility of 10 day storage seems a reality in the near future. The ready availability of platelet concentrates has made a major contribution to support the development of intensive treatment regimens for haematological and other malignancies. Considerable advances have been made in platelet transfusion therapy over the last 4 decades but some areas continue to provoke debate. The major issues are whether or not to give prophylactic platelet transfusions and optimum prophylactic platelet dose to prevent thrombocytopenic bleeding.

Patients with severe thrombocytopenia are clearly at an increased risk for bleeding and consequently it has been standard practice to give platelet transfusions to thrombocytopenic patients as supportive care either prophylactically (to reduce the risk of bleeding in the absence of clinical haemorrhage) or therapeutically (to control active bleeding). However, the approach to the optimal use of platelet transfusions to reduce the risk of clinically significant bleeding in such patients is unclear. Until recently, there have been few prospective randomized clinical trials for evaluating the relative effect of different platelet transfusion regimens or platelet doses on clinical outcomes. Two such studies on platelet dose have now been under taken, the PLADO (Prophylactic PLatelet Dose) and the SToP (Strategies for the Transfusion of Platelets) trials. Also, at least two randomized controlled trials evaluating the relative value of prophylactic versus therapeutic platelet transfusions have been initiated in thrombocytopenic patients with haematological malignancies[2].

A number of evidence-based guidelines have recommend prophylactic platelet transfusions at a trigger of $10x10^9$/l and the use of therapeutic transfusions when there is significant bleeding or when an intervention is anticipated[3,4]. Therapeutic platelet transfusions are unequivocally indicated for thrombocytopenic patients with active bleeding, although serious spontaneous haemorrhage due to thrombocytopenia alone is unlikely to occur at platelet counts above $10x10^9$/l. A threshold of $10x10^9$/l is therefore as safe as higher levels for patients without additional risk factors. Risk factors include sepsis, concurrent use of antibiotics or other abnormalities of haemostasis. Patients with chronic and sustained failure of platelet production, for example some patients with Myelodysplastic syndrome or aplastic anaemia, may remain free of serious haemorrhage with platelet counts consistently below $10x10^9$/l or even $5x10^9$/l. Long term prophylactic platelet transfusions may be best avoided in these patients because of the risk of alloimmunization and platelet refractoriness, and other complications of transfusion. Therapeutic platelets should be used to treat overt haemorrhage and prophylactic platelets may be used to prevent recurrent haemorrhage during unstable periods associated with infection or active treatment[5]. BCSH has given following recommendations for prophylactic platelet transfusions during surgical intervention:

a. For bone marrow aspiration and biopsy no platelet support is required.
b. For lumbar puncture, epidural anesthesia, gastroscopy and biopsy, insertion of indwelling lines, transbronchial biopsy, liver biopsy, laparotomy or similar procedures the platelet count should be raised to at least $50x10^9$/l.

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c. For surgery in critical sites such as the eye or the brain the platelet count should be raised to $100x10^9$/l.

For prophylactic platelets transfusions the most widely quoted trial, which evaluated a lower platelet trigger of 10×10^9/l versus 20×10^9/l was a multi center randomized controlled trial[6]. The results of this trial provided data that there was no significant difference between the two groups in severe bleeding events or mortality. Since then there have been at least seven other studies that have evaluated the optimal threshold level for triggering platelet transfusion at platelet counts of 10×10^9/l versus 20×10^9/l. Four of these studies were randomized controlled trials and three were non-randomized. Uniformly none of these seven studies showed increase in bleeding risk or difference in clinical outcome when the lower transfusion trigger was used. More recent studies provide evidence that it might be possible to reduce the prophylactic platelet trigger even lower than 10×10^9/l.

The PLADO study[7] attempted to determine the optimal prophylactic platelet dose in patients undergoing stem cell transplant or chemotherapy. It concludes that prophylactic platelet doses $\geq 1.1X10^{11}/m^2$ given at a platelet transfusion trigger of $\leq 10 \times 10^9$/l have no effect on the frequency of any WHO bleeding grade in patients with hypoproliferative thrombocytopenia due to chemotherapy or stem cell transplant. The total amount of platelets transfused is significantly less in the low dose arm compared to both median and high dose arms. It means that hematology / oncology patients with hypoproliferative thrombocytopenia can be safely transfused with low dose platelets at a 10×10^9/l platelet transfusion trigger.

The SToP study which has recently been concluded was multi-center prospective randomized trial to demonstrate that a lower dose prophylactic platelet transfusion strategy was not inferior to a standard dose strategy for outcome of WHO grade 2 bleeding or greater. The results of this study are not yet available. Two new randomized controlled trials are in progress comparing the use of prophylactic versus therapeutic platelet transfusions. Initial results of one of the study have been presented in American Society of Hematology Annual Meeting held in December 2008[8]. The authors concluded that therapeutic platelet transfusion strategy is cost effective and safe in patients after autologous stem cell transplantation.

The use of platelet transfusion continues to increase with development of more aggressive chemotherapy regimens. Platelet transfusions are very effective in reducing the risk of thrombocytopenic bleeding but are expensive and associated with significant adverse events including the risk of transmission of viruses, bacteria, parasites, prions and many as yet unknown microbiological agents. Many queries on rational use of platelet transfusions remain unanswered. It is hoped that ongoing clinical trials will provide answers to some of these crucial questions.

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Your views and news

Dear Colleagues : Your contributions to PSH newsletter are backbone to its success. The response so far has been lukewarm. Please send short communications, case reports, scientific activities and developments in your departments and issues of common interest. Photographs of scientific events/meetings are also welcome.

Update Address

Please update your addresses in case there is any change in it. All members are requested to email us their mobile/phone contact and email address.

Next PSH newsletter will be issued by Dr Nadeem Ikram new PSH Secretary. He will communicate to the members for the corresponding address and other relevant information shortly.