**Administer with caution – Risks of platelet transfusion**

*Unnecessary platelet transfusion may cause more harm than good in dengue patients, must be*

**New Delhi: 22nd August:** Until and unless a patient’s platelet count is below 10,000, or there is spontaneous, active bleeding, no platelet transfusion is required.“It is a myth that all dengue patients require platelet transfusion. In fact unnecessary transfusion causes more harm and puts the patient at risk of complications such as sepsis, transfusion-related acute lung injury (TRALI), transfusion-associated circulatory overload (TACO), alloimmunization and allergic and anaphylactic transfusion reactions” said Padma Shri Awardee **Dr. KK Aggarwal**, President HCFI & Honorary Secretary General IMA.

Other risks of platelet transfusion include febrile non-hemolytic transfusion reactions (FNHTR), transfusion-associated graft-versus-host disease (ta-GVHD), andpost-transfusion purpura (PTP). The primary cause of death in patients suffering from dengue is capillary leakage, which causes blood deficiency in the intravascular compartment, leading to multi-organ failure. At the first instance of plasma leakage from the intravascular compartment to the extravascular compartment, fluid replacement amounting to 20 ml per kg body weight per hour must be administered. This must be continued till the difference between the upper and lower blood pressure is over 40 mmHg, or the patient passes adequate urine. This is all that is required to treat the patient. Giving unnecessary platelet transfusion can make the patient more unwell.

Dr. KK Aggarwal added, “While treating dengue patients, physicians should remember the ‘Formula of 20' i.e. rise in pulse by more than 20; fall of BP by more than 20; difference between lower and upper BP less than 20 and presence of more than 20 hemorrhagic spots on the arm after a tourniquet test suggest a high-risk situation and the person needs immediate medical attention”.

**Platelet transfusion is risky because of the following reasons:**

1. Donor screening does not eliminate the risk of bacterial and other bloodborne infections
2. Platelets are stored at room temperature, where bacteria can proliferate rapidly
3. The incidence of bacterial contamination is higher for platelets than for red blood cells (RBC) (1 in 2000 for platelets versus 1 in 30,000 for RBC)
4. Transfusion of any blood product, including platelets, can lead to transfusion-related acute lung injury
5. Transfusion of any blood product may be associated with circulatory overload. Platelet transfusion introduces approximately 200 mL of intravascular volume per transfusion. The incidence of TACO is in the range of one to three per 100,000 transfusions and is higher in patients predisposed to volume overload (eg, with comorbidities such as congestive heart failure, renal failure, respiratory failure, and positive fluid balance).
6. Platelets express Class I human leukocyte antigen (HLA) antigens, which can be recognized by the recipient's immune system as foreign. Production of anti-HLA antibodies can adversely affect the response to future platelet transfusions.
7. Allergic reactions to platelet transfusion are relatively common. They are usually due to IgE directed against proteins in the donor plasma. Common symptoms include urticaria and pruritus in mild cases, and wheezing, shortness of breath and hypotension in more severe cases.
8. Anaphylactic reactions (severe allergic reactions) are a very rare complication of platelet transfusion. These are associated with rapid onset of shock, angioedema, and respiratory distress. Many cases occur due to the production of anti-IgA antibodies in recipients who are IgA deficient.
9. Febrile non-hemolytic transfusion reactions are mediated by various inflammatory mediators and leukocytes and may manifest as fevers, chills, and rigors.
10. Transfusion-associated graft-versus-host disease (ta-GVHD) can occur with any transfusion that contains lymphocytes, given the correct immunologic setting.

The risk of complications is in less than 1% of dengue cases and, if warning signals are known to the public, all deaths from dengue can be avoided. The onus of prevention lies in the hands of each person. We must not let mosquitos breed around our houses, wear full sleeve clothes while going out and use mosquito repellent in the monsoon season.