which would suit the requirements of all patient care / medical unit settings. A consensus could be reached on the basic requirements of a functionally appropriate hospital bed based on a detailed study.

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PREOPERATIVE BLEEDING TIME AND CLOTTING TIME TESTS :USEFUL OR WASTEFUL?

Dear Editor,

Preoperative Bleeding Time (BT) and Clotting Time (CT) tests are expected to detect occult haemostatic disorders. Conversely it is assumed that normal BT-CT results exclude haemostatic disorders. This presumption is the basis of selecting BT-CT as the screening tests.

In our hospital, in two years, 1662 BT and 1713 CT preoperative tests were performed. BT test was performed by modified method and CT by capillary method [1]. No patient had history or clinical findings suggestive of haemostatic disorders. None of the patients suffered from excessive intra or postoperative blood loss that could be attributed to haemostatic disorders. We did not find any abnormal BT or CT result that could indicate haemostatic disorder in these patients. On the contrary, in established cases of haemostatic disorders, BT- CT results were abnormal only when the disorder assumed severe form. Are we justified in relying on BT - CT as preoperative screening tests for haemostatic disorders?

Bleeding time test should be performed by Standard Template Method or Ivy's method. Standardization is very important as even minor deviation like a change in the size of sphygmomanometer cuff can alter the results. The modified method commonly used in service hospitals [1] is too crude and unreliable for any valuable information. There is no correlation between a skin template bleeding time, certain visceral bleeding times, preoperative BT results and surgical blood loss or transfusion requirements [2,3]. Trauma to vascular system, not haemostatic disorders, causes most of the perioperative blood loss.

Whole blood clotting time measures the time required for formation of the first traces of thrombin sufficient to produce a visible clot. The CT is abnormal only with severe coagulation factors deficiency (as low as 10-15%). It is a poor screening test that seldom provides information not obtained by other more reliable tests. The CT test by capillary method as practised in service hospitals, is highly unreliable [1].

These investigations (BT-CT) are not sensitive screening tests to detect haemostatic disorders [1]. Their role in preoperative screening is questionable [4-6]. Despite thousands of these tests not a single case of haemostatic disorder was detected in our hospital in preoperative workout. Informal discussions with surgeons, anaesthesiologists and pathologists revealed that in their cumulative experience of over 100 practicing years not a single asymptomatic case of haemostatic disorder was detected by BT-CT tests. More often than not, these tests are carried out as an empirical legacy, perhaps for completion of medical documents.

Our experience and review of literature reveal that BT-CT tests do not fulfill the criteria required for screening tests. Haemostatic disorders can be easily suspected by history and clinical examination, the first step to diagnosis. A guestimate at the number of BT-CT tests performed in all service hospitals would be mind-boggling. Are we justified in such colossal waste of time, resources and effort in performing these non-contributory tests? The surgeons, anaesthesiologists and pathologists need to ponder over it. The BT-CT tests as routine blind preoperative screening, should be dispensed with. This would require change of perception and attitude. The Senior Advisers perhaps can issue suitable instructions to streamline preoperative investigations. The time and resources thus saved can be redirected to more fruitful work.

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RADICAL CURE OF VIVAX MALARIA : 5 OR 14 DAYS

Dear Editor,

Plasmodium vivax malaria accounts for 60-65% of total malaria cases in India. Vivax infections cause significant morbidity since in addition to the primary infection, dormant liver stages (hypnozoites) may re-emerge long after completion of full course of chloroquine treatment (25mg/kg) to cause relapses. The relapse patterns of *P vivax* are broadly divided into the tropical or Chesson strain type characterized by an early primary attack followed by a short latent period, the appearance of frequent relapses and the St. Elizabeth strain of the temperature type by an early primary attack and a long latent period of 6-14 months followed by relapses [1]. Primaquine is the drug used for radical cure of vivax malaria.

The National Malaria Eradication Programme of India recommends primaquine in a dose of 15 mg/day for 5 days to all vivax malaria patients, which is also followed in the Armed Forces. WHO while advocating the treatment of malaria including prevention of relapses has categorized population based on their immune status with respect to malaria-immune, semi-immune and non-immune. While they advocate a 5 day primaquine regimen for the first two categories, they recommend a 14 day schedule for the non immune population. For some reasons, we in India have considered ourselves as either immune or semi-immune. Practically speaking, there can be no immune population. Further, immunity in malaria is so diverse on account of strain variation within the same species that a migratory or floating population like the Armed Forces can never be considered immune or semi-immune. It has an appropriate label as

non-immune since we may be semi-immune to a strain at one place but moving on to another place may not be semi-immune or immune to the strain prevalent there. Most western authorities have also advocated a 14 day primaquine regimen [2]. However, for logistic and financial reasons, 5 day primaquine regimen has been preferred in India.

Various relapse patterns have been reported from different parts of India. Adak et al reported in 1998, three relapse patterns from Northern India-tropical, temperate and intermediate [3]. A recently concluded study from Mumbai has reported a relapse pattern of predominantly tropical type, in which most of the relapses occurred in first 6 months of completion of chloroquine therapy [1]. A comparison of no primaquine, 5 day primaquine and 14 day primaquine has shown that the relapse rate is zero with 14 day regimen, 19.4% with the 5 day regimen and 11.4% with no primaquine regimen [4].

Another study has shown that the relapse rate with 5 day primaquine regimen is 13% [5], while it was 12.67% on no primaquine regimen as recently reported from Mumbai [1]. All patients who relapsed in this study showed complete response to the 14 day primaquine regimen.

Another aspect that has often been deliberated is, whether the relapses that occur in vivax cases are true relapses or a fresh infection. Scientifically, only polymerase chain reaction test can determine this, which can be undertaken only in special circumstances or for research purpose and not as a routine. The protagonists of 'fresh vivax infection' subscribe to the view on account of endemicity and transmission potential of malaria existing locally. This argument can well be countered in view of the above-mentioned studies wherein the rate of relapse (should we say suffering once again) was zero with 14 day primaquine regimen.

Given the 13-19.4% relapse rate with 5 day primaquine regimen, the tropical type of relapse and complete response to the 14 day primaquine regimen, the utility of the 5 day regimen needs to be considered again. We have also seen cases of vivax malaria that have relapsed after 5 day primaquine regimen (personal communication, data not available).

Based on the available data, we need to revise our existing national policy as well as that in the Armed Forces on radical cure of vivax malaria. Adopting the 14 day primaquine regimen will increase the duration of hospital admission from vivax malaria, but will ultimately decrease the expenditure incurred per patient of vivax malaria. We hope through this communication, to generate opinion from the experts in the field of malariology and also encourage debate on this issue at a larger forum.

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