Correspondence

P2Y12 inhibitor in acute coronary syndromes

The article by Pais in a recent issue of your *Journal* is interesting.[1] Pais has discussed many aspects of the use of P2Y12 inhibitors. However, it would have been useful to cover the following two additional points.

1. Some information on monitoring of the therapeutic effect of P2Y12 inhibitor in the laboratory would have been useful as some new point-of-care testing (POCT) tools are available for this purpose. An example is the VerifyNow system that can be used to assess the platelet inhibitor effect of P2Y12.[2,3] These techniques can be helpful in the management of patients.
2. The cost-effectiveness of the P2Y12 inhibitor should have been discussed.[4] The data on this aspect are limited.

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Entomological investigation of chikungunya outbreaks in a few sites in Tamil Nadu during 2010

In India, the chikungunya virus (CHIKV) was first detected in Kolkata[1] during the first ever chikungunya outbreak in 1963–64. The disease re-emerged in 2005–06, primarily in Gujarat and Maharashtra. It progressed eastwards and southwards, affecting 1.39 million people in at least 213 districts in 16 states and Union Territories in India.[2,3] In Tamil Nadu, the disease was detected during early 2006 in the northernmost district of Thiruvallur. The Centre for Research in Medical Entomology (CRME), following a request from the Directorate of Public Health and Preventive Medicine, Tamil Nadu, carried out a large entomological investigation in the districts of Theni (10 sites), Tirunelveli (4 sites), Thiruvallur (12 sites) and Dharmapuri (16 sites).

Entomological investigations are done to find out the potential larval breeding habitats, as well as the prevalence and abundance of the principal vector, *Aedes aegypti.* These investigations also aim to identify temporal risk factors related to the transmission of CHIKV. All containers, man-made and natural, were inspected for immatures of the vector and these were reared till they emerged as adults so as to enable the researchers to identify them following standard keys and calculate the Stegomyia indices.[4,5] The pupae sampled from the domestic containers provided a more accurate measurement because the mortality rate among them was lower than that among the larvae, which made it possible to extrapolate and obtain the absolute number of adults of *Aedes aegypti*. The density of the adult mosquitoes was calibrated as per man-hour on the basis of resting as well as human-landing collections. The HI, CI, BI and PI recorded were 39.34, 14.53, 48.13 and 239.88, respectively, in Theni; 14.35, 3.15, 14.97 and 39.82, respectively, in Tirunelveli; 33.97, 13.62, 52.19 and 277.69, respectively, in Thiruvallur; and 32.22, 4.84, 40.14 and 262.75, respectively, in Dharmapuri. These figures are far above the WHO threshold of BI 20. The average adult density recorded was 3.45, which is also higher than the critical level.[5] Mud pots and cement tanks/cisterns were identified as the key breeding containers (Fig.1).

The intensity of breeding was the greatest in mud pots, followed by cement tanks/cisterns, plastic drums, metal drums, metal containers, plastic containers, etc. Used and discarded tyres bred the vector species prodigiously in Tirunelveli and Dharmapuri districts. The mean pupae density ranged between 144.02 and 268.9, whereas the figure for pupae per person ranged between 0.33 and 3.54, which generally corroborated with the adult density. Altogether 282 males and 435 females of *Aedes aegypti* were sampled from all the study sites.

The Stegomyia indices for Thiruvallur were the highest, followed by Dharmapuri, Theni and Tirunelveli, in that order. It was recommended that appropriate information, as well as education and communication programmes be initiated to help the community participate in the control of chikungunya and dengue fevers (the vector species for both infections is the same).

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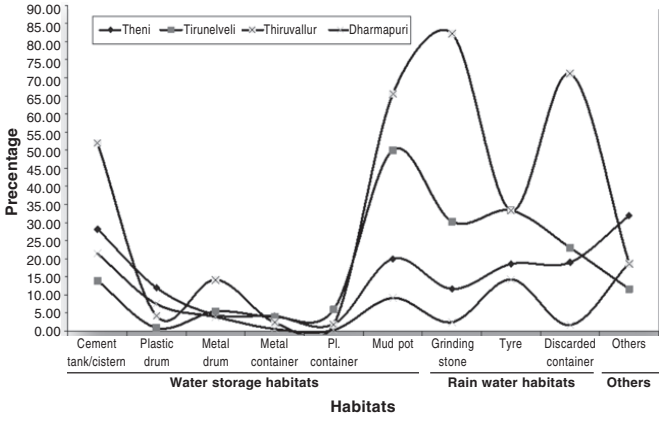

FIG 1. Percentage contribution of *Aedes aegypti* breeding in different habitats

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Saying no to NEET is certainly not neat

All those actively involved in the current educational scenario of the medical profession would have experienced a sense of despair when the Supreme Court's verdict on the National Eligibility and Entrance Test (NEET) was announced in July 2013. It was a verdict which many students were awaiting for months and the final decision must have left them frustrated.

What was the rationale for NEET? NEET was introduced after a lot of discussion at various levels in the Medical Council of India, the Union Ministry of Health and the state governments to address specific issues related to the current admission process. The issues which concerned everyone were as follows:

1. A multiplicity of examinations were held all over India for admission to different state medical colleges, deemed to be universities, other private medical colleges, etc. which meant that the candidate would be forced to take several examinations (as many as 10 or more) in quick succession.
2. If the candidate was aiming for admission in more than one professional course, the number of examinations would increase further.
3. The examinations were held at several centres all over India and involved a lot of travelling.
4. The dates of some examinations often clashed, depriving candidates of the chance to appear for some of them.
5. The syllabi of the examinations varied from university to university.
6. The type of multiple-choice questions, too, varied from one examination to the other.
7. A prescribed fee had to be paid for all examinations. The fees added up to large amounts, depending on the number of examinations the candidate appeared for. This system deprived those with economic constraints of the opportunity to take several examinations.
8. Private coaching centres, which charged high entrance fees, had mushroomed. Many candidates were forced to enrol in these to increase their chances of qualifying. Since the coaching institutes were largely urban, candidates from the rural areas were at a disadvantage.

It was to avoid these pitfalls that NEET was envisaged. The idea was to introduce a single national examination with a notified syllabus which took into account the syllabi of various boards, so that no one would be at a disadvantage. Candidates would save money on travelling and fees for multiple examinations. There would be no need to acquaint oneself with different syllabi.

The examination would be an entrance examination for colleges which filled their seats on an all-India basis, such as the central institutes, and for the 25% seats that are open to all-India students in the state colleges. The eligibility score would be 50% for general category candidates and 40% for candidates under the reserved category. Seats would be filled on an all-India basis, with the aid of the process of counselling, the criterion being rank in the NEET examination. Thus, the available pool of nearly 10 000 seats all over India would be filled on the basis of merit.

For the state institutes deemed to be universities and other private medical colleges, the NEET would be merely an *eligibility examination*. All the existing reservation norms relating to these institutes, including reservation for rural/urban candidates, would continue to apply. The only difference would be that all candidates, irrespective of their category, would have to qualify in the NEET examination by securing a minimum of 50% (or 40% for reserved category) to be eligible for admission. This would ensure the maintenance of a minimum standard of quality with respect to the students admitted to the professional courses without the violation of any constitutional reservation norms. It would also not violate the right of the institutions to charge the permitted fees.

Yet, the court struck down the proposal to hold this examination. Were these facts presented properly and in the appropriate context to the Supreme Court? No one knows. The fact is that we are back where we started.

What would be the effect of admitting substandard students to medical colleges merely on the basis of their ability to pay? Figure 1

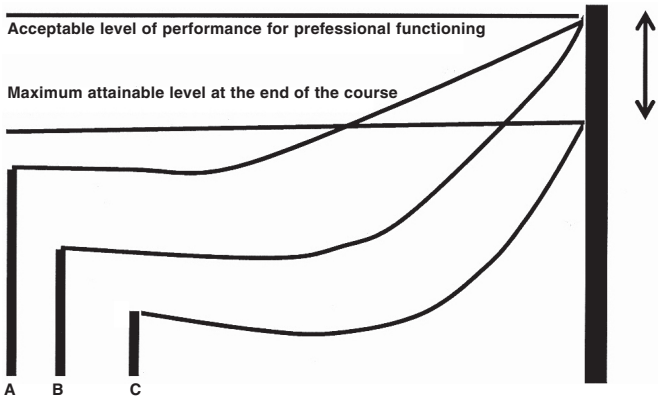

Fig 1. Learning curve

describes the possible outcome. Students belonging to A and B categories have varying levels of ability at admission. After a period of adjustment, they can still be brought to an acceptable level of performance with the help of intensive teaching/learning activities. However, if one were to admit students belonging to category C, the results would be quite different. Students whose level is very poor at baseline would go through a period in which their performance would fall due to the stress of having to cope with the syllabus. Further, even if they improved later on, they would be unlikely to ever reach a level acceptable for certification. In a profession such as medicine, the gap indicated by the arrow would have disastrous consequences for the future of the health of the population. Who would be answerable then—the colleges, the regulator, the government or the courts?

It is hoped that the serious consequences of failing to make the necessary changes are taken into consideration, the true merits of the NEET are understood and the decision is reversed on appeal. The postgraduate NEET would be another matter altogether.

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Biomedical research: A career option after MBBS

Many Indian teenagers are attracted to the profession of medicine, when they are too young to realize what the intricacies of this career are. These days, most medical graduates are keen on specialization so that they can remain competitive in their profession, whereas biomedical research, as an alternative career option, remains mostly unexplored due to lack of exposure.

In India, those conducting biomedical research at the doctoral level consist mainly of postgraduates in the basic sciences. In this context, the country could benefit enormously by pooling the intellectual resources of medical graduates. This could make a real difference particularly in comprehensive research involving the pathogenesis and treatment of various diseases.

The disease-research community in developed countries comprises a fair proportion of medical scientists. Early exposure and excellent infrastructure, suitably backed by a versatile academic environment, make this possible. In India, however, MBBS students have no exposure to the latest biomedical advances and no motivation to pursue science, and are not trained to conduct well-planned scientific studies. There is a dichotomy in the system, with members of the medical faculty being 'encouraged' to publish research papers for their promotion, yet receiving no exposure to this field early in their career. Hence, the current approach towards medical education must be altered so as to enable medical graduates to pursue a research-oriented career.

Introducing papers on contemporary topics, such as molecular biology, genetics, regenerative medicine, bioinformatics and neurobiology, as well as a mandatory short-term research project in the MBBS curriculum, and encouraging medical students to attend scientific symposia and other allied activities would arouse their interest in the alternative career path in which medical practice is supplemented with research. Generous provisions for pre- and post-doctoral fellowships would also facilitate the entry of medical graduates into science.

Indigenous biomedical researchers could work together towards discovering effective and affordable options for the treatment of different health problems. This could relieve the overburdened national health system. Moreover, there is likely to be no dearth of opportunities for Indian medical scientists to look into the disease trends and genetic susceptibilities of the country's large, ethnically diverse and under-explored population.

Can we not think a little beyond our age-old tradition of training thousands of 'basic doctors' every year, and instead, inspire a few of them to pursue research for the advancement of medical science? As a medical student who has had the rare opportunity of exposure to the exciting world of biomedical research, I sincerely hope that leaders in our profession will make suitable changes to the curriculum and give us an opportunity to make an informed choice regarding our career path. In the process, the country would benefit from doctors who could contribute to the growth of our knowledge base, rather than making do with doctors who are only downstream users of new developments in medical science.

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