The results are shown in Table 1. In the present study 28.5% of the total prescriptions showed drug substitution. Out of these prescriptions 19.5% were found to be substituted generically whereas 9% of these prescriptions showed therapeutic substitution. The incidence of each group of drugs in prescriptions showing generic substitution and therapeutic substitution was observed. It was the maximum with antibiotics (46.15%) and (44.44%), followed by drugs for peptic ulcer disease (20.5%) and (16.66%), and analgesic/antiinflammatory drugs (10.25%) and (27.77%) respectively. Drug substitution was also seen with preparations like vitamins, minerals and hematinics, antihistaminics, antianxiety drugs, antihypertensives and cough syrups as shown in Table 1. The patients/relatives were very cooperative but there were mixed reactions from the chemists while conducting the study. The present study indicated drug substitution to be quite prevalent in the society. Using non-proprietary names to prescribe drugs can be cost-effective to the patients and can also tackle the problem of the “Therapeutic Jungle”. We suggest that therapeutic substitution could also be curtailed by writing non-proprietary name of the drugs in prescriptions.

In conclusion, the drug control system of the government must recognize this serious hidden irrationality on the part of the pharmacist in the overall interest of the society.

Table 1: Drug substitution

<table>
<thead>
<tr>
<th>Prescriptions evaluated</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescriptions showing drug substitution</td>
<td>57 (28.5%)</td>
</tr>
<tr>
<td>Prescriptions showing generic substitution</td>
<td>39 (19.5%)</td>
</tr>
<tr>
<td>Prescriptions showing therapeutic substitution</td>
<td>18 (9%)</td>
</tr>
</tbody>
</table>

Incidence of each group of drugs in prescriptions showing generic substitution:
- Antibiotics: 18 (46.15%)
- Peptic ulcer disease: 8 (20.5%)
- Analgesic/antiinflammatory drugs: 4 (10.25%)
- Vitamins, minerals and hematinics: 4 (10.25%)
- Antihistaminics: 2 (5.12%)
- Antianxiety drugs: 2 (5.12%)
- Antihypertensive drugs: 1 (2.56%)

Incidence of each group of drugs in prescriptions showing therapeutic substitution:
- Prescribed: Cefaclor, Tinidazole, Ampicillin, Ampicillin+Cloxacillin, Ofloxacin, Ciprofloxacin, Clopofloxacin, Ceftriaxone, Paracetamol, Nimesulide, Paracetamol, Ibuprofen, Diclofenac Na, Celecoxib, Famotidine, Lansoprazole, Ulcikit, Metronidazole+Amoxicillin, Salbutamol+Guaifenesin, Enalapril

Crossword puzzle: A novel teaching-learning method

Sirs,

The concept of ‘active learning’ is gaining much momentum, especially in the field of medicine. New methods like Problem-based learning (PBL) Quiz,1 to name a few are being introduced, based on the said concept. Here we would like to share our experience of a novel teaching-learning (T-L) method, ‘crossword puzzle’ in the subject of pharmacology. In the academic year 2001-2002, we introduced the crossword puzzle to II year medical undergraduates during the interim of their one and half year course in pharmacology. The objectives were: to gauge the interest among students in a medical crossword puzzle and to test the knowledge of the relevant systems in pharmacology.

Two crossword puzzles (one in General Pharmacology, a slightly modified version has been published in The Meducator2 and another in Autonomic Nervous System) were constructed and reviewed by the authors for suitability to students. After completion of teaching the respective systems (i.e. minimum of one month), one printed crossword puzzle, consisting of about 25 items across and down, each was distributed to each of the randomized groups of students. Each group consisted of three students. The time allotted for completion was one hour. Irrespective of the status of completion, all the puzzle sheets were collected and an anonymous evaluation sheet was distributed individually to students. The evaluation questionnaire consisted of a) usefulness of the crossword puzzle session, b) difficulty level of the topic, c) necessity for such sessions in future, d) improvement in knowledge and e) any other

References

suggestions/comments. Gradation in the evaluation sheet regarding ‘usefulness’ consisted of a scale ranging from No (Zero), a little (1) to very much (5). At the end of the session the correct answers were discussed with the aid of a multimedia projector.

None of the groups could complete the two puzzles in the allotted time. On the whole, the average completion rate of answers was 65% (range 41% to 81%) and 58% (range 30% to 75%) for General Pharmacology and Autonomic Nervous System respectively. The result, upon analysis of the evaluation sheets is given below (Table 1). Though no group could complete the puzzles, the enthusiasm created by the sessions was reflected in the feedback. There is no known report in the literature regarding the usage of a crossword puzzle as a T-L method in pharmacology. It is a novel tool, especially for group learning, generating much interest and interaction within the group and also between the educators and learners. A well-planned crossword puzzle is likely to test higher levels of cognition as compared to many other types of assessments.

The major limitations of our study were

a. The study was conducted in only one institution and the number of students were expectantly far below for a meaningful extrapolation to a large population. A study involving successive batches and possibly other centers could be more meaningful.

b. In any new T-L method the views of the teachers also have an important bearing. Unfortunately, because very few teachers were there and the majority of them were part and parcel of the study, this could not be undertaken, bearing in mind the bias factor.

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Table 1
The overall feedback of students regarding the crossword puzzles

<table>
<thead>
<tr>
<th>Factor</th>
<th>GP (n=55)</th>
<th>ANS (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful to very useful</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>Not difficult to a little difficult</td>
<td>40</td>
<td>27</td>
</tr>
<tr>
<td>More such sessions needed</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Improves knowledge- much to very much</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>Other comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs prior notice</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Inadequate time</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Oh! God</td>
<td>2</td>
<td>–</td>
</tr>
</tbody>
</table>

GP: General pharmacology, ANS: Autonomic nervous system

Electronic version of the crossword puzzle (ANS) is available with the author (G.S.) and will be sent upon request.

References