INTERCHANGEABILITY STUDY OF MULTISOURCE PARACETAMOL 500MG TABLETS, PRODUCED IN MONGOLIA

L.Tsatsra et al

1 Ph.D student of School of Pharmacy, Health Sciences University of Mongolia

Methods

12 unit samples were tested in each of three media. Dissolution of 7 samples after 15 minutes are shown in Table 1.

<table>
<thead>
<tr>
<th>Media</th>
<th>Panadol (INN)</th>
<th>LM1</th>
<th>LM2</th>
<th>LM3</th>
<th>LM4</th>
<th>LM5</th>
<th>LM6</th>
<th>LM7</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH=1.2</td>
<td>100.75±2.57</td>
<td>101.62±2.69</td>
<td>103.46±2.88</td>
<td>89.94±3.75</td>
<td>98.20±2.11</td>
<td>101.14±3.60</td>
<td>96.83±8.09</td>
<td>100.07±6.68</td>
</tr>
<tr>
<td>pH=4.5</td>
<td>100.56±1.23</td>
<td>99.72±1.82</td>
<td>100.12±1.88</td>
<td>100.08±1.27</td>
<td>98.94±7.23</td>
<td>100.83±1.16</td>
<td>99.74±1.62</td>
<td>99.02±1.84</td>
</tr>
<tr>
<td>pH=6.8</td>
<td>104.75±5.96</td>
<td>98.77±1.27</td>
<td>100.95±4.11</td>
<td>92.06±3.97</td>
<td>98.75±1.46</td>
<td>104.43±4.25</td>
<td>102.40±3.02</td>
<td>99.82±3.04</td>
</tr>
</tbody>
</table>

According to the questionnaire, all manufacturers producing Paracetamol tablets formulated the dosage form in consideration of active pharmaceutical ingredient, excipients and machinery’s specification. As criteria for choosing the formulation, manufacturers were used compendial monograph, stability study data and dissolution results.

Excipients such as mannitol, sorbitol, sodium bicarbonate, which fasten the drug absorption are not contained in Paracetamol formulations (Table 2) produced by Mongolian manufacturers. Three manufacturers use Povidone as a binder, same like comparator product. Most formulations contain Talc and Magnesium stearate as a lubricant mix, when comparator contains Stearic acid and Talc. All formulations contain starch and cellulose, their derivatives.

Results

Discussion

According to the current regulation for registration of imported medicines bioequivalence study data is requested, while for registration of domestic medicines only dissolution data is requested. The study of interchangeability of multisource generic products still not requested as part of marketing authorization. With the economical growth the number of pharmaceutical manufacturers and number of imported and locally produced medicines are increasing. In mean time many sales representatives of foreign pharmaceutical producers promoting their products as innovators without proper scientific evidence, especially without strict bioequivalence study data. Mongolia adopts international standards and norms, mainly WHO guidelines and there is need to upgrade the registration rule with annex for establishment of interchangeability of multisource generic products.

According to the WHO guideline Multisource (generic) pharmaceutical products: guidelines on registration requirements to establish interchangeability and Kalantz et al. suggested that paracetamol tablets may be bioequaled from bioequivalence studies if the release of paracetamol from the tablets is greater than 85% in 15 minutes.

Conclusion

Paracetamol 500mg tablets produced by all 7 local manufacturers: LM1, LM2, LM3, LM4, LM5, LM6 and LM7 dissolved in more than 85% within 15 minutes in each of three media. Therefore the dissolution profile comparison with I2 test is unnecessary. Samples: LM1, LM2, LM3, LM4, LM5, LM6 and LM7 are bioequivalent and could be interchangeable with comparator pharmaceutical product.