Pyramid environment reduces the wound healing suppressant properties of dexamethasone in albino rats

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With a view to investigate the contribution and role of environment within a wooden pyramid model on the wound healing suppressant effect of dexamethasone in rats, wound breaking strength, dry weight, hydroxyproline content, and histology of granulation tissue of the dead space wound were studied in rats. The results indicate that the environment within the wooden pyramid not only promotes significant wound healing but also reduces the wound healing suppressant effect of dexamethasone. Histological studies also confirmed the results.

Key words: Dexamethasone, Pyramidial environment, Rats, Wound healing

The pyramids of Egypt are surrounded by mystery and there are claims of the presence of certain powers within it. Pyramid models with proportional dimensions when centered on the true north-south axis as that of the Egyptian pyramid can generate an energy field within it. In mice, exposure to pyramid models protects against stress induced atrophy of hippocampal neurons and also enhances learning and memory. Pyramid environment is believed to enhance wound-healing power and possess many other beneficial effects on biological systems.

The present study was undertaken to understand the effects of the pyramid environment on the different parameters of wound healing alone and in the presence of dexamethasone induced delay in wound healing.
subcutaneously, 2.5×0.5 cm polypropylene tube in the paravertebral lumbar region through a small 0.5 cm transverse incision. Dexamethasone was administered on every alternate day for 10 days. On the 10th day, granulation tissue harvested on the tube was carefully dissected out along with the implanted tube. The granulation tissue was cut along its length and the breaking strength was measured by the method of Lee. Later, these granulation tissues were collected, dried at 60°C for 24 hr and weighed. The weight was expressed as mg dry tissue/100 g of body weight. The dried granulation tissue was then utilized to estimate hydroxyproline content. Histologic staining was carried out using Haematoxylin and Eosin stain.

Statistical analysis — The values are expressed as mean ± SE. The data were analysed using a software package. Graph Pad In Stat (GPIS) 1990 version: 1.13 for analysis of variance (ANOVA).

The results are presented in Table 1 and Figs 1-4. The histological photomicrographs of the 10 days old granulation tissue in group II revealed the matrix to be better developed. Collagen was well organized and formed bundles between the cells. Due to this better formation of ground substance, the cells appeared to be spread apart. There was better neovascularisation here than in all other groups.

Tissues of group IV also showed neovascularisation with more cells closely packed with scanty ground matrix.

Figs 1-4 — Photomicrographs of 10 days old granulation tissues. Fig. 1 — Home cage control (a) maximum number of fibroblasts; (b) collagen bundles are indistinguishable. Fig. 2 — Pyramid control: (a) few cells with well-organized collagen bundles (b) well developed blood vessels. Fig. 3 — Dexamethasone home cage (a) poorly developed matrix shows many cells; (b) poor collagen formation. Fig. 4 — Dexamethasone pyramid: (a) moderate cell population with some matrix formation; (b) Neovascularisation. [Figs 1-4, H & E 100 X]
A preliminary study on wound healing, earlier formed tissue showed better developed ground substance as compared to the tissues of group III. This substance in the inner newly formed tissue. But, hydroxyproline content could significantly increase the breaking strength of treated groups, pyramid environment showed histological findings, which was confirmed by the breaking strength and hydroxyproline content.

The results indicate that pyramid environment could significantly increase the breaking strength of 10 days old granulation tissue, dry weight and hydroxyproline content, which was confirmed by the histological findings.

In the present study in both control and drug treated groups, pyramid environment showed enhanced healing of dead space wound as confirmed by all the parameters of dead space wound. It could therefore be said that the pyramid has promoted the maturation of collagenation phase or cross linking of collagen. Since, the process of collagen formation, maturation and organization gives strength to the formed collagen. The energy field within the pyramid will raise the resonant level of flux passes through tissues a secondary electric of functioning. Inside the pyramid, when magnetic lines of force in the tissue cells, which result of activating metabolism.

This study shows that pyramid environment as such promotes better wound healing, but it is not able to completely reverse the suppressant effects of dexamethasone.

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References


Table 1 — Effect of pyramid environment in absence and presence of dexamethasone on granulation tissue breaking strength, dry weight and hydroxyproline content of dead space wound

<table>
<thead>
<tr>
<th>Groups</th>
<th>Drugs</th>
<th>Dose (mg/kg) &amp; route</th>
<th>Granulation breaking strength (g)</th>
<th>Granulation dry weight (mg/100 g)</th>
<th>Hydroxyproline concentration (mg/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Home cage control</td>
<td>—</td>
<td>203 ± 20</td>
<td>34 ± 3</td>
<td>19 ± 2</td>
</tr>
<tr>
<td>II</td>
<td>Pyramid control</td>
<td>—</td>
<td>322 ± 16&lt;sup&gt;b&lt;/sup&gt;</td>
<td>43 ± 3&lt;sup&gt;b&lt;/sup&gt;</td>
<td>32 ± 4&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>III</td>
<td>Dexamethasone home cage</td>
<td>0.3, im</td>
<td>167 ± 17&lt;sup&gt;bc&lt;/sup&gt;</td>
<td>23 ± 7&lt;sup&gt;bc&lt;/sup&gt;</td>
<td>13 ± 2&lt;sup&gt;bc&lt;/sup&gt;</td>
</tr>
<tr>
<td>IV</td>
<td>Dexamethasone pyramid</td>
<td>0.3, im</td>
<td>225 ± 14&lt;sup&gt;cd&lt;/sup&gt;</td>
<td>30 ± 2&lt;sup&gt;c&lt;/sup&gt;</td>
<td>19 ± 5&lt;sup&gt;e&lt;/sup&gt;</td>
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</tbody>
</table>

P values:<sup>a</sup><sup>b</sup><sup>c</sup><sup>d</sup><sup>e</sup>(significantly higher than dexamethasone home cage group)
10 Max Toth & Greg Nielsen, Model pyramid construction in *Pyramid power* (InnerTraditions India) 1985, 153.