Platelet Concentrate May Speed Wound Healing

BY MIRIAM E. TUCKER
Senior Writer

WASHINGTON — Autologous platelet concentrate may be helpful in treating difficult-to-heal wounds resulting from Mohs surgery, Dr. Dafnis Carranza said at the annual meeting of the American Academy of Dermatology.

Developed in the 1970s, autologous platelet concentrate is a by-product of platelet-rich plasma concentration containing three to five times the native concentration of platelets. The technique is approved for management of chronic venous stasis wounds and has been off-label available for a variety of acute wounds, including those resulting from dental, orthopedic, and plastic surgery.

With Mohs surgery defects, Dr. Carranza and her associates at the University of California, Los Angeles, have seen an average 50% decrease in wound size after one application of autologous platelet concentrate and complete healing after two applications. For a biological dressing to be effective, it must be safe and nontoxic to tissue, readily available and inexpensive, accelerate healing, and minimize wound care. We believe an autologous platelet concentrate dressing meets these criteria," said Dr. Carranza, who said that she has "no relevant relationships with industry.

At least two companies, Harvest Technologies and Cytomedia, make autologous platelet concentrate kits. The process involves several steps: First, 20 ml of blood is collected into a syringe containing a citrate-based anticoagulant. The blood is then centrifuged into platelet-rich and platelet-poor plasma and the platelet-poor plasma is discarded, leaving about 3 ml of platelet-rich plasma (PRP).

Next, using a 26G dual-channel puncture tip, the PRP is combined with thrombin in 10% calcium chloride solution to activate it. The resulting flexible-tissue graft is then contoured to the debrided wound bed. Promogran is then applied over the graft site, followed by Adaptic and XCell cellulose antimicrobial dressing.

The limb is wrapped with sterile gauze

**Table 1: Adverse Reactions Reported at Least 5% of Patients Treated with ZIANA Gel**

<table>
<thead>
<tr>
<th>Local Skin Reactions</th>
<th>ZIANA Gel N=1835</th>
<th>Clindamycin N=1428</th>
<th>Tretinoin N=846</th>
<th>Vehicle N=423</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythema</td>
<td>636 (35)</td>
<td>416 (26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling</td>
<td>237 (13)</td>
<td>280 (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Itching</td>
<td>189 (10)</td>
<td>70 (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burning</td>
<td>38 (2)</td>
<td>56 (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stingning</td>
<td>33 (2)</td>
<td>27 (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At each study visit, application site reactions on a scale of 0 (none), 1 (mild), 2 (moderate), and 3 (severe), and the mean scores were calculated for each of the local skin reactions. In Studies 1 and 2, 1277 subjects enrolled with moderate to severe acne. 854 subjects treated with ZIANA Gel and 423 treated with vehicle. Analysis over the 12-week study period demonstrated that cutaneous irritation scores peaked at two weeks of therapy, and were slightly higher for the ZIANA-treated group, decreasing thereafter. Eighteen out of 442 subjects (4%) reported gastrointestinal symptoms.

**Drug Interactions**

Concomitant Topical Medication

Concomitant topical medication, medicated or abrasive soaps and cleansers, soaps and cosmetics that have a strong drying effect, and products with high concentrations of alcohol, astringents, spices or lime should be used with caution. Erythema induced by ZIANA Gel should be used in combination with erythromycin-containing products due to its clindamycin component, in clinical studies have shown antagonism between these two antimicrobials. The clinical significance of this in vitro antagonism is not known.

**Microvascular Blocking Agents**

Clindamycin has been shown to have neomycin blocking properties that may enhance the action of other neomycin blocking agents. Therefore, ZIANA Gel should be used with caution in patients receiving such agents.

**Use in Specific Populations**

**Pregnancy**

**Category C.** There are no well-controlled trials in pregnant women treated with ZIANA Gel. ZIANA Gel should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. ZIANA Gel was tested for maternal and developmental toxicity in New Zealand White Rabbits with topical doses of 60, 110 and 600 mg/kg/day, ZIANA Gel at 600 mg/kg/day (approximately 12 times the recommended clinical dose assuming 100% absorption and based on body surface area comparison) was considered to be the no-observed-adverse-effect level (NOAEL) for maternal and developmental toxicity following topical administration of ZIANA Gel for two weeks prior to and continuing until gestation day 19, inclusive. For purposes of comparison of the animal exposure to human exposure, the recommended clinical dose is defined as 1 g of ZIANA Gel applied daily to a 60 kg person.

Clindamycin Teratology:

Studies (Segment B) studies using clindamycin were performed orally in rats up to 650 mg/kg/day and mice up to 100 mg/kg/day and 48 to 49 times amount of clindamycin in the recommended clinical dose based on a body surface area comparison, respectively or with subclinical dosages of clindamycin up to 180 mg/kg/day (175 and 17 times the amount of clindamycin in the recommended clinical dose based on a body surface area comparison, respectively) revealed no evidence of teratogenicity.

Although no definite pattern of teratogenicity and no causal association have been established from these cases, 5 of the reports describe the rare birth defect category, holoprosencephaly (defects associated with incomplete neural tube development in the embryo). The significance of these spontaneous reports in terms of risk to the fetus is not known.

Dermal tretinoin has been shown to be teratogenic in rabbits and can be shown to be teratogenic in rabbits when administered in doses 78 times the recommended clinical dose based on a body surface area comparison. Dermal tretinoin has been shown to be teratogenic in rats when administered in doses 78 times the recommended clinical dose based on a body surface area comparison.

**Nursing Mothers**

It is not known whether clindamycin is excreted in human milk following use of ZIANA Gel. However, orally and parenterally administered clindamycin has been reported to appear in breast milk. Because of the potential for serious adverse reactions in nursing infants, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. It is not known whether tretinoin is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when ZIANA Gel is administered to a nursing woman.

Safety and effectiveness of ZIANA Gel in pediatric patients under the age of 12 have not been established.

Clinical trials of ZIANA Gel included patients 12-17 years of age.

**Dermatologic Use**

The clinical studies of ZIANA Gel did not include sufficient numbers of subjects aged 65 and older to determine whether they respond differently from younger patients.

Manufactured for:

**Medics, The Dermatology Company®**

Revised: 11/2006

**300-13A**

This wound is shown before treatment with platelets.