Metastatic bone cancer occurs when cancer cells from the original tumor area travel (or metastasize) through the body and move into the bone. Metastatic lesions are common with cancer of the breast, lung, prostate, kidney, and thyroid. One of the main symptoms of bone cancer is bone pain. The treatment of cancer of the bone, especially metastatic cancer, has two goals: 1) management of the neoplasm and 2) management of the symptoms produced by the local lesion. Prognosis is affected by a patient’s age, the size of the primary tumor, grade and stage, degree of lymphatic and blood vessel invasion, the duration of symptoms and the location of the tumor on the arm, leg, or trunk. There are two ways bone metastasis is treated in standard Western medicine. Systemic therapy, aimed at cancer cells that have spread throughout the body, includes chemotherapy, hormone therapy, and immunotherapy. Local therapy, aimed at killing cancer cells in one specific part of the body, includes radiation therapy and surgery. At present, there is no cure for metastatic bone disease.

On pages 16-17 of issue #1, 2005 of the *Zhe Jiang Zhong Yi Za Zhi (Zhejiang Journal of Chinese Medicine)*, Wang Yun-qi, of the Hunan Provincial Tumor Hospital, published an article titled, “Clinical Observations on the Treatment of 30 Cases of Metastatic Bone Cancer with Yang He Tang Jia Wei (Yang-harmonizing Decoction with Added Flavors) Combined with 99m Technetium-Methylene Diphosphate [TC-MDP] Compared to 30 Cases Only Treated with TC-MDP.” Since this study suggests that the combination of Chinese herbal medicine in tandem with chemotherapy gets better results than chemotherapy alone in the treatment of metastatic bone cancer, a summary of this study is presented below.

**Cohort description**

Altogether, there were 60 patients enrolled in this two-wing comparison study. All 60 patients were seen as inpatients at the Hunan Provincial Tumor Hospital between August, 2002 and March, 2004, and all suffered from a confirmed diagnosis of metastatic bone cancer. This diagnosis was confirmed by cellular pathology, CT scan, ECT, MRI, and X-ray, and all had marked bone pain. These patients had either not yet been treated with radiation and chemotherapy, or it had been at least 3-4 weeks since they had been treated with radiation and chemotherapy. All patients were over 18 years of age, and none had any abnormalities of heart, liver, or kidney function. Further, all had a life expectancy of more than two months.

These 60 patients were randomly divided into two groups, a so-called treatment group and a comparison group. In the treatment group, there were 18 males and 12 females age 35-72 years, with an average age of 48 years. Twelve of these patients had lung cancer, eight had breast cancer, four had nasal and/or throat cancer, two had prostate cancer, one had stomach cancer, one had intestinal cancer, and one had kidney cancer. Eight cases had a Karnofsky score of 60-70 points, 15 had a score of 70-80 points, and seven had a score of 80-90 points. In the comparison group, there were 19 males and 11 females aged 37-73 years, with an average age of 49.5 years. Thirteen of these patients had lung cancer, seven had breast cancer, two had prostate cancer, two had nasal and/or throat cancer, one had esophageal cancer, two had intestinal cancer, one had multiple osteosarcoma, one had kidney cancer, and one had malignant lymphoma. Nine of these cases had a Karnofsky score of 60-70 points, 15 had a score of 70-80 points, and seven had a score of 80-90 points. Therefore, there was no significant statistical differences between these two groups in terms of sex, age, type of cancer, Karnofsky score, or degree of bone pain. Hence these two groups were considered comparable.

**Pain rating scale**

A pain rating scale was used in this study to determine the severity of the bone pain suffered by these 60 patients. Zero meant that there was no pain. One meant there was slight pain which was bearable and did not require pain
medication. In addition, patients were able to carry on with their normal lifestyle and sleep. Two meant that there was moderate pain which did disturb sleep. Patients in this case did desire to use pain-killing medication. Three meant there was severe pain with accompanying vegetative nerve disorder, severe disturbance of sleep, and the most definite desire to use pain-stopping medications.

Treatment method

Members of both groups received 100mg of TC-MDP in 250ml of saline solution via intravenous drip over a period of 3-4 hours once per day. During this time, they did not use pain-stopping medications. In addition, members of the treatment group were administered the following version of Yang He Tang:

- **Shu Di** (cooked Radix Rehmanniae Glutinosae)
- **Huang Qi** (Radix Astragali Membranacei), 30g each
- **Lu Jiao Jiao** (Gelatinum Cornu Cervi), dissolved in the decocted liquid after straining
- **Xu Duan** (Radix Dipsaci), 15g each
- **Pao Jiang** (schorched Rhizoma Zingiberis Officinalis)
- **Gui Zhi** (Ramulus Cinnamomi Cassiae), 12g each
- **Rou Gui** (Cortex Cinnamomi Cassiae)
- **processed Ru Xiang** (Resina Olibani)
- **processed Mo Yao** (Resina Myrrhae)
- **Da Huang** (Radix Et Rhizoma Rhei), added later, 6g each
- **Ma Huang** (Herba Ephedrae), 5g
- **Bai Jie Zi** (Semem Sinapis Albae), 2g
- **Wu Gong** (Scolopendra Subspinipes), 3 strips
- **Quan Xie** (Buthus Martensii), 9g
- **Gou Ji** (Rhizoma Cibotii Barometes)
- **Bu Gu Zhi** (Fructus Psoraleae Corylifoliae), 20g each

One packet of these medicinals were decocted in water per day and administered in two divided doses. After four weeks of continuous treatment, results were analyzed for both groups.

Study outcomes

Marked effect was defined as a reduction in pain by two degrees on the pain rating scale. Some effect was defined as a reduction in pain by one degree. No effect meant that the pain did not decrease or got worse. The following table shows the outcomes based on these criteria.

<table>
<thead>
<tr>
<th>Group</th>
<th>Marked effect</th>
<th>Some effect</th>
<th>No effect</th>
<th>Total effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>13</td>
<td>14</td>
<td>3</td>
<td>90%</td>
</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td>13</td>
<td>10</td>
<td>66.7%</td>
</tr>
</tbody>
</table>

In addition, in the treatment group, the mean Karnofsky score was 80.20±5.68, while the mean Karnofsky score was only 73.66±4.92 in the comparison group. This meant that the median quality of life was better in the treatment group than in the comparison group. There were no significant changes in mean blood calcium levels from before to after treatment in either of these two groups or between these two groups. Likewise, there were no obvious side effects in either group. Therefore, in terms of pain reduction and quality of life, the combination of Chinese herbal medicine with chemotherapy appears to have been superior to chemotherapy alone.

Discussion

According to Dr. Wang, metastatic bone cancer corresponds to the traditional Chinese medical disease categories of bone impediment and yin impediment. Its root is vacuity and its tips or branches are repletions. This root vacuity is mainly a yang qi vacuity, while the tips are mainly cold, phlegm, [blood] stasis, and [qi] stagnation. Therefore, Dr. Wang believes that the Chinese medical treatment of this condition should warm yang and free the flow of the vessels, scatter cold and transform phlegm, and Yang He Tang Jia Wei conforms to these needs. Within this formula, Shu Di is the sovereign which greatly supplements the blood and qi. Lu Jiao Jiao is a bloody, meaty natural ingredient which is able to engender the essence and supplement the marrow, strengthen the sinews and strengthen the bones. It acts as Shu Di’s assistant or adjuvant. Pao Jiang warms the center, breaks yin, and rescues yang. Rou Gui enters the constructive [aspect] where it warms and frees the flow of the blood vessels. Ma Huang spreads the defensive [qi] and scatters cold. When used along with Pao Jiang and Rou Gui, these medicinals are able to promote the diffusion and free flow of the qi and blood. When used with Shu Di and Lu Jiao Jiao, there is supplementation without stagnation. Bai Jie Zi dispels phlegm lodged between the skin and the inner membranes. Gui Zhi warms the channels and frees the flow of the vessels. Qi makes the blood quicken. Therefore, the addition of Huang Qi is in order to boost the qi to quicken the blood, while the addition of processed Ru Xiang and Mo Yao is in order to dispel stasis and stop pain. Wu Gong and Quan Xie are both bug ingredients which free the flow of the network vessels and stop pain. They are also able to combat cancer toxins with their own toxicity. Because the kidneys govern the bones, the formula also includes Gou Ji, Xu Duan, and Bu Gu Zhi to supplement the kidneys and strengthen the bones, free the flow of the sinews and quicken the network vessels. Finally, Da Huang frees the flow of the stools and promotes the expulsion of toxins. Taken as a whole, this formula has the ability to warm yang and free the flow of the vessels, scatter cold and transform phlegm. When combined with chemotherapy for the treatment of metastatic bone cancer, it achieves a definite effect for stopping pain and a better effect than the chemotherapy alone. Based on the above outcomes, Dr. Wang thinks that this approach deserves to be progressively and widely adopted in clinical practice.