Pathological study on effect of Kanglaite Injection on cervical cancer

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[Abstract] Objective: To explore effect of Kanglaite Injection (KLT) on Langerhans cells (LC) in cervical cancer tissue. Methods: 61 patients were randomly divided into 32 cases in treatment group and 29 cases in control group. The treatment group was treated with KLT and immunohistochemical SP method was employed to observe surgically changes of LC in tissue surgically removed and its morphological characteristics and compare with that in control group. Results: LC in cervical cancer tissue in treatment group was significantly increased ($P<0.05$) and was in close contact with cancer cells, indicating enhanced killing effect on cancer cells. Conclusion: KLT had anti-cancer effect in patients with cervical cancer and could improve perioperative immune function, elevate cure rate of operation and prolong survival.

[Key words] KLT; Cervical cancer; Pathological study

Kanglaite Injection (KLT) is a novel anticancer injection with its active ingredient semen coicis extracted with advanced technology. Phase I and II clinical studies have shown its antineoplastic effect and very slight side reaction [1]. On the literature basis impact of KLT on Langerhans Cells (LC) in perioperative cervical cancer tissue and treatment were studied.

Materials and methods
61 cases with cervical cancer were enrolled and all had biopsy with diagnosis pathologically confirmed as squamous carcinoma of cervix (SCC). They were randomly divided into 32cases in treatment group, age 35–72 years with average 58.84 years; 29 cases in control group, age 43–75 years with average 57.4 years. Patients in the two groups received radical hysterectomy with venous blood collected 1 week before and after the treatment for determination of sub-group of T lymphocyte.

Medication: KLT was applied 1 week before and after operation, 100ml daily, 21 days as a treatment cycle in treatment group. In control group saline, 100ml daily, 21 days as a treatment cycle was injected. Evaluation on effect was made after 2 cycles in each group.

Observation index: HE staining microscopic examination was adopted to observe degree of cancer cell differentiation, depth of invasion, and interstitial lymphocytes infiltration. S-100 protein immunohistochemical SP method was used for observing morphological characteristics
and distribution of LC. 10 high-power fields with dense positive cells were selected from each slice. 100 cells were counted per field and quantity of positive pack was calculated for mean values. 0~2/H was graded as (+), 3~4/H as (++), >5/H as (+++). As for LC in cancer tissue, evenly scattered was as (+), focal distributed as (++), and germinal centered as (+++).

Results
Comparison of quantity of LC between the two group showed that quantity of LC in cancerous tissue in treatment group was remarkably higher than that in control group ($P<0.05$), see Tab.1.

<table>
<thead>
<tr>
<th>Group</th>
<th>LC</th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>+</td>
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</tr>
<tr>
<td>Treatment</td>
<td>32</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Control</td>
<td>29</td>
<td>21</td>
<td>8</td>
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<tr>
<td>Total</td>
<td>61</td>
<td>29</td>
<td>32</td>
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Immune function of patients after operation in treatment group had notable enhancement and quantities of $T_3$, $T_4$, $T_8$, and LC were apparently increased with prognosis remarkably improved in treatment group as compared with those in control group. This showed that KLT could significantly raise comprehensive effect in patients with cervical cancer.

Discussion
Cervical cancer, a most common gynecological malignant cancer, is a serious threat to women life with more than 200,000 females dying of cervical cancer annually in the world. Cervical cancer is a malignant cancer at location of utero-vaginal portion and endocervical canal. General tendency is that incidence in countryside is higher than that in urban area, and in mountainous region higher than that in plain area. Metastasis of cervical cancer could be directly invasive to adjacent tissue or organ, to vaginal fornix and vaginal wall downward, to uterus body upward, to tissue of pelvic cavity on both sides, to bladder forward, or to rectum backward. Metastasis via lymphatic vessels could be found at paracervical area, internal and external ilium area, or inguinal lymph nodes, even at supraclavicular part and other lymph nodes in whole body in case of advanced stage. Hematogenous metastasis is rarely found and most common metastatic part is lung, liver and bones. 2/3 of outpatients after symptoms occurred for 3 months are already at advanced stage.

Therefore, early diagnosis and rational but effective treatment is very important. In recent years, chemotherapy of treating cervical cancer has got certain therapeutic effect along with development of chemotherapeutic drugs and improvement of route of administration and
method. However, most drugs present serious adverse reaction. In chemotherapy body immune function is reduced when cells were killed. Literatures reported fairly better effect of KLT on treating large intestinal cancer, liver cancer, and hysteromyoma but without apparent toxic adverse reaction. This study observed impact of KLT on perioperative LC in cervical cancer tissue, its therapeutic effect, and treatment [2, 3]. Result showed that there was close relation between quantity of LC/morphological character/distribution and differentiation degree of cervical cancer tissue/invasion depth/ infiltration of lymphocytes. Along with reduction in differential degree of cancer cells and increase in invasion depth, infiltration tendency of LC and interstitial lymphocytes was reduced and this is possibly that the lower differentiation of canceration cells, the deeper infiltration, the stronger its inhibition to immune function, the fewer quantity of LC, and the less infiltration of lymphocytes. This reflected damage of tumor on body immune function morphologically. Postoperative observation in pathological tissue found that quantity of S-100 protein positive LC in surgically removed tissue in treatment group was remarkably higher than that in control group, (P < 0.05). LC was observed to extend to cancer cells to have close contact, or LC and lymphocytes were accompanied with each other. This indicated that KLT had certain effect on activating immunological killing function of local immune active cells [4, 5].

Through treatment of perioperative immune function regulation, body immune status was enhanced, patient tolerance to operation was raised, operation healing rate was elevated and patient survival got prolonged.

[References]

