

## MEETING ABSTRACTS

## Seminar of Gynecological Oncology of the International Conference on Psychiatry and Neurorestoratology (ICPN2022) II

Organizing Committee of ICPN 2022<sup>1,\*</sup>

<sup>1</sup>*The International Conference on Psychiatry and Neurorestoratology (ICPN2022)*

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### Abstract

The International Conference on Psychiatry and Neurorestoratology (ICPN2022) will be held in Zhengzhou in November, 2022 with the theme of psychiatry and global mental health under the current global context.

On the ICPN 2022, a seminar on gynecological oncology was held and panel reports were shared.

In recent years, the treatment of gynecological tumors has produced inspiring progress.

On the one hand, medical technology has seen tremendous advances, and medical imaging, treatment methods, and surgical plans have undergone new changes. On the other hand, the barriers of different medicine segments are breaking down. Multi-level synergistic treatment has become a popular trend. In addition, traditional Chinese medicine therapy also provides a supplement for the diagnosis and treatment of gynecological tumors.

The discussions of the seminar focused on some controversial issues of gynecological malignant tumor surgery, process management of breast cancer, imaging diagnosis of gynecological tumors, precise diagnosis and treatment of gynecological tumors, infection and nursing of gynecological malignant tumors, and in particular the traditional Chinese medicine.

These research and academic exchanges, from a multi-perspective and multidisciplinary aspect, enable researchers and clinicians to better address concerns of gynecological oncology patients. Through this conference, we look forward to receiving more discussions and solutions on the whole management model of gynecological tumor prevention and treatment from multiple perspectives, thus to promote the vigorous development of gynecological oncology.

Reviewer of the Abstracts: Dongmei Zhang

### 01. A study on the innovation of colour education system combined with the method of tonifying the kidney and draining the liver to intervene in depression symptoms after surgery and radiotherapy for gynaecological malignant tumours

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**Objectives:** To study the innovation of the colour education system in higher art institutions combined with the self-prepared kidney and liver tonifying soup to treat patients with depressive symptoms after gynaecological malignant tumour surgery and radiotherapy, and to observe the changes in patients' sex hormone levels and Hamilton Depression Scale (HAMD) factor scores before and after the intervention of the combined treatment programme. To investigate whether the combined treatment program of self-prepared kidney and liver tonics and the innovative colour education system in higher art institutions has the effect of treating depressive symptoms in patients after surgery, radiation therapy or chemotherapy for gynecological malignancies, and also to assess whether the treatment program has the effect of regulating hormone concentrations in patients' blood.

**Methods:** Eighty patients with gynaecological malignancies who had undergone surgery, radiotherapy or chemotherapy and with depression were randomly divided into an experimental group and a conventional treatment group. In the experimental group, the patients were given the colour education system of the higher art school combined with the self-formulated kidney and liver tonics, and the colour education treatment was once a week for 2 months.

**Results:** The serum E<sub>2</sub> results of the study subjects indicated that the serum FSH and LH of the experimental group as well as the control group before treatment were statistically analyzed,  $p > 0.05$  indicating no statistical difference between the two groups. Serum E<sub>2</sub> data from both groups were statistically analyzed again after the therapeutic intervention,  $p < 0.05$ , indicating a statistical difference between the two groups. The effectiveness of the treatment

protocol proposed in this study was evaluated according to the HAMD factor score before and after the treatment intervention, and the effective rate of the experimental group was 91%.

**Conclusion:** This study proposes that the innovation of colour education system in higher art colleges combined with the method of tonifying the kidney and draining the liver can effectively regulate the depressive symptoms and the hormonal secretion function of patients after gynaecological malignant tumour surgery, radiotherapy, or chemotherapy, so as to achieve the effect of treating the depressive symptoms of patients.

**Table 1. Comparison of the levels of each indicator between the two groups.**

Group	<i>n</i>	Period	HAMD Score	E <sub>2</sub> (pmol/mL)	LH (miu/mL)	Effective rate (%)
Experimental group	40	Before treatment	1.02 ± 0.19	1.62 ± 8.64	35.12 ± 9.56	91
		After treatment	4.12 ± 0.91	1.25 ± 9.11	29.95 ± 5.48	
Control group	40	Before treatment	0.91 ± 0.26	1.51 ± 10.02	33.12 ± 1.23	12
		After treatment	0.82 ± 0.52	90.21 ± 4.25	43.28 ± 5.79	

## 02. Study on the diagnostic value of CT three-dimensional reconstruction technology for cervical cancer—Taking the driver group as an example

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**Objectives:** Cervical cancer is one of the most common gynecological malignant tumors. The judgment of Lymph Node Metastasis (LNM) is the basis of staging diagnosis of cervical cancer, which directly affects treatment decisions. Relevant studies have shown that Magnetic Resonance Imaging (MRI) and other technologies are not effective and feasible. In order to optimize the LNM diagnosis effect of cervical cancer, the study took the driver group as an example, and proposed the three-dimensional reconstruction technology of Computed Tomography (CT) to improve the clinical treatment level of cervical cancer.

**Methods:** Retrospective analysis was made on 258 cases of cervical cancer from September 2019 to September 2021. MRI scanning and CT scanning were performed on all patients, and lymph node reconstruction was achieved based on the original data. Three gynaecologists above the level of chief physician read the films independently in a blind way, observed the lymph nodes, determined the suspicious lymph nodes, and drew a three-dimensional model. Mimics10.01 software was used for 3D reconstruction, SPSS24.0 software was used for analysis of all data, and Receiver Operating Characteristic (ROC) curve was used for prediction and judgment.

**Results:** The comparison of diagnostic efficacy between the two groups of patients is shown in Table 1. In Table 1, group 1 and group 2 use CT three-dimensional reconstruction technology for diagnosis. Among them, the LNM diagnostic criteria of group 1 and group 2 are the shortest and longest diameter lines respectively, and the MRI diagnostic method is used in group 3. The Area Under Curve (AUC) values of group 1, group 2 and group 3 were 0.889, 0.804 and 0.765, respectively, with significant difference between groups ( $p < 0.05$ ). From the sensitivity and specificity of diagnosis, the difference between the three groups was statistically significant ( $p < 0.05$ ).

**Conclusion:** The research results show that CT three-dimensional reconstruction technology can improve the LNM diagnosis of cervical cancer, make up for the lack of MRI diagnosis, and help improve the quality of clinical treatment of cervical cancer for drivers. In future research, we need to expand the sample size to further verify the conclusions of this study.

**Table 1. Comparison of diagnostic efficacy between three groups of patients.**

	Sensitivity	Specificity	AUC
Group 1	90.2%	78.6%	0.889
Group 2	84.3%	66.4%	0.804
Group 3	77.9%	55.2%	0.765
<i>t</i>	2.65	3.44	4.88
<i>p</i>	0.001	0.001	0.001

## 03. Prediction of breast cancer characteristic genes by neural network based on CT image omics map

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**Objectives:** The primary incidence rate of female malignant tumors is breast cancer. In the late stage of breast cancer, distant metastasis will occur, leading to different organ diseases and threatening the lives of patients. Imagomics can extract features from different influences with high throughput, and conduct targeted diagnosis and prognosis evaluation for patients after quantitative analysis. Therefore, a neural network model for predicting characteristic genes of breast cancer based on CT Imaging Histone Nomogram (CTHN) is designed, and the structure, timeliness, efficiency and accuracy of the model are evaluated.

**Methods:** A total of 94 patients with breast cancer in a hospital from October 2021 to May 2022 were selected for the study. After inclusion criteria screening, 80 patients were selected for experimental control, and models and validation were established after image sketching, feature extraction and screening. Finally, SPSS22.0 statistical software was used to analyze data, and a prediction model was constructed through the neural network plate of SPSS, and the model was predicted and evaluated using the Receiver Operating Characteristic (ROC) curve. When  $p < 0.05$  the difference was considered statistically significant.

**Results:** According to the infection of 80 patients after operation, a neural network model was established to predict the infection of genes. The comparison of model prediction results is shown in Table 1.

As shown in Table 1, the overall percentage predicted by the model reached 87.31%. The percentage not infected reached 90.91%, and the percentage infected reached 40%.

**Conclusion:** The neural network optimized by CT image omics diagram can effectively predict the characteristic genes of breast cancer, and the accuracy is improved to more than 90% in the comparative prediction and analysis of gene infection in breast cancer patients, which provides a feasible way for the future prediction of the characteristic genes of breast cancer.

**Table 1. Comparison of prediction results of neural network models.**

Measured	Forecast		
	Uninfected amount	Amount of infection	Accuracy (%)
Uninfected amount	167	17	93.35
Amount of infection	23	26	54.36
Overall percentage (%)	90.91	40	87.31

#### 04. Effect of acupoint massage practice course on deep vein thrombosis after gynecological tumor operation under the background of medical education

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**Objectives:** Deep Vein Thrombosis (DVT) refers to the abnormal clotting of the blood in the deep vein. Postoperative DVT can cause disability and death. Drug intervention or exercise training is often used to prevent deep vein thrombosis, but the postoperative symptoms of deep vein thrombosis still exist. Therefore, this research studies on the prevention of deep vein thrombosis after gynecological tumor surgery through acupoint massage practice course.

**Methods:** From November 2021 to May 2022, 78 middle-aged and elderly female patients with gynecologic tumor after surgery in a hospital were selected as the study subjects. After screening of inclusion criteria, 60 patients were selected for the control experiment. In the control experiment, 60 patients were divided into two groups, 30 patients in each group. The first group was the traditional drug intervention group, receiving drug treatment, and the second group was the experimental treatment group using the point massage practice course. The treatment experiment lasted for 15 days, which was the normal postoperative hospital stay. The postoperative complications of the two groups were calculated by statistical SPSS22.0 software.  $p < 0.05$  indicated that the difference was statistically significant.

**Results:** Table 1 shows the comparison of the incidence of DVT in the controlled experiment.

According to the results of the controlled experiment, under the intervention of traditional drugs in the control group, there were still 5 patients with deep vein thrombosis after surgery. While in the experimental group, there were no patients with deep vein thrombosis in the acupoint massage practice course. The results indicated that the application of acupoint massage under the background of medical education to patients with gynecological tumor surgery can effectively prevent the occurrence of deep vein thrombosis symptoms in patients.

**Conclusion:** Acupoint massage in the context of medical education is an effective means to prevent postoperative deep vein thrombosis in patients with gynecological tumors. Through the control experiment and the analysis of the experimental results, the blood flow speed of rouge vein is faster than the traditional drug intervention, and can prevent the occurrence of deep vein thrombosis.

**Table 1. Comparison and significance test of incidence of deep vein thrombosis in different groups.**

Group	Patients (case)	Deep vein thrombosis (case)	Occurrence rate (%)
Control group	30	6	20
Experience group	30	0	0
<i>p</i>		-	<0.05

## 05. Study on the efficacy of organic corrosion inhibitor in acid medium as complex in the treatment of systemic diseases in patients with gynecological tumors

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**Objectives:** Common gynecological tumors are vulva skin tumor, cervical tumor, and uterine fibroids, etc. At present, there is still no uniform standard for the causes of cancer and the mechanism of recurrence and metastasis. If the treatment of gynecological tumor patients is not timely, it is easy to cause cancer. But there will be a variety of diseases, the mortality rate is high. Although traditional chemotherapy can reduce the relevant symptoms of patients, there are often adverse reactions and recurrence and metastasis after surgery. How to effectively prevent tumor metastasis and recurrence is one of the key research directions of anti-tumor. Therefore, in this study, organic corrosion inhibitors in acidic media were used as complexes to implant into the organ section after tumor resection to ensure tumor metastasis and recurrence.

**Methods:** 83 patients with gynecological tumors in a hospital from September 2021 to April 2022 were selected as the research objects. After screening the inclusion criteria, 70 patients were selected for the control experiment. In the control experiment, the average course of gynecological cancer patients was 5 years, and the average tumor diameter was  $(20 \pm 13)$  mm. 70 patients were divided into two groups, 35 patients in each group. The first group was the control group for routine treatment, and the second group was the experimental group for implantation of organic corrosion inhibitor complex for treatment after surgery. The data were analyzed by SPSS22.0 software. The statistical method was *t*-test, and  $p < 0.05$  was the difference with statistical significance.

**Results:** During the study, 70 patients were subject to a control experiment. In the control experiment, the adverse reactions and recurrence rate in the control group were higher than those in the experimental group, and the adverse reactions in the control group reached 17 cases, accounting for 48.58%. There were 8 cases of recurrence, accounting for 22.86%. There were only 9 cases of adverse reactions in the experimental group, accounting for 25.70%. 2 cases recurred, accounting for 6.66%. Specific data are shown in Table 1.

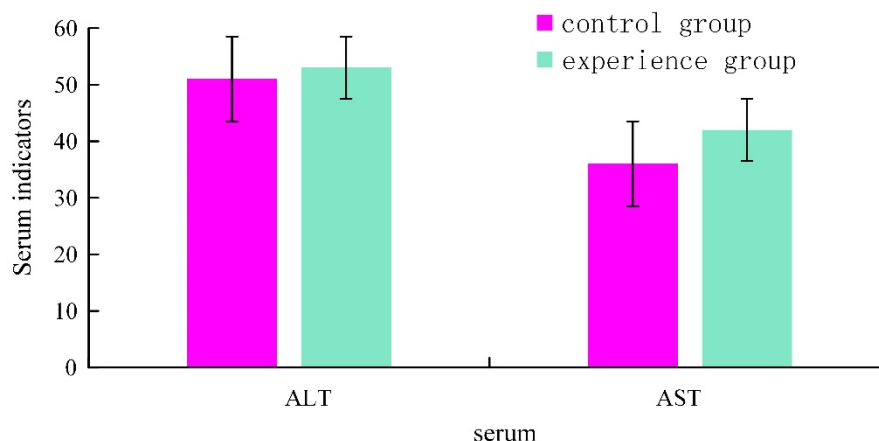
In the comparison of serum indicators, the control group's Alanine Aminotransferase (ALT) is  $51.4 \pm 16$ , and Aspartate Aminotransferase (AST) is  $36 \pm 12.1$ . The ALT and AST of the experimental group were  $53 \pm 18$  and  $42 \pm 16$ . There is a significant difference between the two groups in the level of indicators. The specific results are shown in Fig. 1.

**Conclusion:** This study demonstrated that a new organic corrosion inhibitor with appropriate cost was applied to gynecological tumor patients as a complex. The experimental results showed that the complex effectively changed the clinical serum indexes of patients. The rate of adverse reactions was lower, and the rate of tumor recurrence and metastasis was lower than that of traditional chemotherapy. It is a safe treatment method with wide clinical application.

**Funding:** This study is supported by the Basic and Frontier Research Projects of Nanyang City "Preparation and pitting inhibition of graphene oxide-ionic liquid nanomaterials" (No. JCQY011).

**Table 1. Comparison of adverse reaction and recurrence rate.**

Group	Number of cases	Adverse reactions		Recurrence rate	
		Number of cases	%	Number of cases	%
Control group	35	17	48.58	8	22.86
Experimental group	35	9	25.7	2	6.66



**Fig. 1. Comparison of serum indicators.**

## 06. Application of color doppler ultrasound combined with X-ray molybdenum target in the diagnosis of breast cancer

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**Objectives:** At present, the treatment of breast cancer patients is mostly surgical resection, but the physical and mental health of patients is vulnerable, and early diagnosis has a positive effect on patients. X-ray molybdenum target technology can be used for the examination of specific structures of breast ducts, which is conducive to the determination of disease types, but it is easy to miss the diagnosis of small lesions. Color doppler ultrasound is non-invasive and convenient, which can be used for early diagnosis of diseases. This study combines color doppler ultrasound and X-ray molybdenum target technology, hoping to improve the accuracy of early diagnosis of breast cancer patients.

**Methods:** 150 suspected breast cancer patients admitted to our hospital from June 2019 to March 2021 were selected and divided into three groups: single treatment group (color doppler ultrasound and X-ray molybdenum target) and combined diagnosis group. The sensitivity, specificity, and accuracy of the two methods and their combined use were compared. SPSS22.0 was used for statistical analysis.

**Results:** From Table 1, the sensitivity, specificity, and accuracy of the combined diagnostic method are significantly higher than that of the single diagnostic method ( $p < 0.05$ ).

**Conclusion:** In the research of color doppler ultrasound combined with X-ray molybdenum target diagnostic technology, the combined diagnostic technology has higher sensitivity, specificity, and accuracy, and has a good application in the early diagnosis of breast cancer patients.

**Table 1. Comparison of diagnostic effectiveness of different detection methods (%).**

Method	Sensitivity	Specificity	Accuracy
Color doppler ultrasound	67.21	67.80	67.50
X-ray molybdenum target	60.66	61.02	60.83
Combined diagnosis	91.80	93.22	92.50
$\chi_1^2/p_1$	0.9234/0.0648	0.9637/0.0628	0.9749/0.0632
$\chi_2^2/p_2$	7.6589/0.0005	7.8973/0.0004	8.6589/0.0000
$\chi_3^2/p_3$	8.1365/0.0002	8.3521/0.0002	9.2568/0.0000

Note:  $\chi_1^2/p_1$  is the comparison between color doppler ultrasound and X-ray molybdenum target examination;  $\chi_2^2/p_2$  and  $\chi_3^2/p_3$  are the combined diagnosis compared with color doppler ultrasound and X-ray molybdenum target examination respectively.

## 07. Effect of aerobic exercise on postoperative rehabilitation and life quality of patients with uterine leiomyoma

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**Objectives:** Uterine leiomyoma is a common benign tumor of women in clinical practice, which will cause a greater negative impact on the life quality of patients. Aerobic exercise can promote lung expansion and accelerate the recovery of the body. Therefore, this research explores the impact of aerobic exercise training on the postoperative rehabilitation and life quality of patients with uterine leiomyoma.

**Methods:** 88 patients with postoperative uterine leiomyoma admitted to our affiliated hospital from February 2021 to January 2022 were selected as the study subjects. The patients were randomly divided into observation group and control group, with 44 patients in each group. The patients in the observation group took appropriate aerobic exercise training, while the patients in the control group maintained routine treatment and nursing methods.

**Results:** The postoperative rehabilitation of the two groups of patients is shown in Table 1. It can be seen that the time of getting out of bed, the first exhaust and the hospital stay in the observation group are shorter than those in the control group, and the difference is statistically significant ( $p < 0.05$ ).

The life quality of patients in the two groups is shown in Table 2. It can be found that the life quality scores in the observation group after aerobic exercise are higher than those in the control group, with a statistically significant difference ( $p < 0.05$ ).

**Conclusion:** The recovery effect of hysteromyoma after operation needs to be improved. Therefore, the effect of aerobic exercise on the postoperative rehabilitation and life quality of patients was explored. The results show that aerobic exercise training can effectively improve the life quality of patients, improve the postoperative rehabilitation effect, and has certain clinical application value.

**Table 1. Postoperative rehabilitation of two groups of patients with hysteromyoma.**

Group	Get out of bed (h)	First discharge of anus (h)	Hospital stay (h)
Observation group	23.36 ± 4.17	9.96 ± 3.11	4.78 ± 1.10
Control group	26.63 ± 4.46	13.05 ± 3.17	6.95 ± 1.22
<i>t</i>	3.553	8.763	4.616
<i>p</i>	0.001	0.000	0.000

**Table 2. Life quality of the two groups of patients with uterine leiomyoma.**

Group	Somatic function	Psychological function	Material life	Social function
Observation group	81.91 ± 6.93	84.29 ± 7.05	84.89 ± 7.90	84.79 ± 7.78
Control group	70.79 ± 6.68	74.45 ± 6.77	75.74 ± 6.78	72.76 ± 6.95
<i>t</i>	7.663	6.678	5.830	7.649
<i>p</i>	0.000	0.000	0.000	0.000

## 08. Mathematical model analysis of gynecological tumor spheroid experiment for real-time cell cycle imaging

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**Objectives:** A mathematical model of gynecological tumor spheroid experiment for real-time cell cycle imaging was constructed to qualitatively analyze the growth law of the tumor. Fitness and accuracy of the model were verified afterwards.

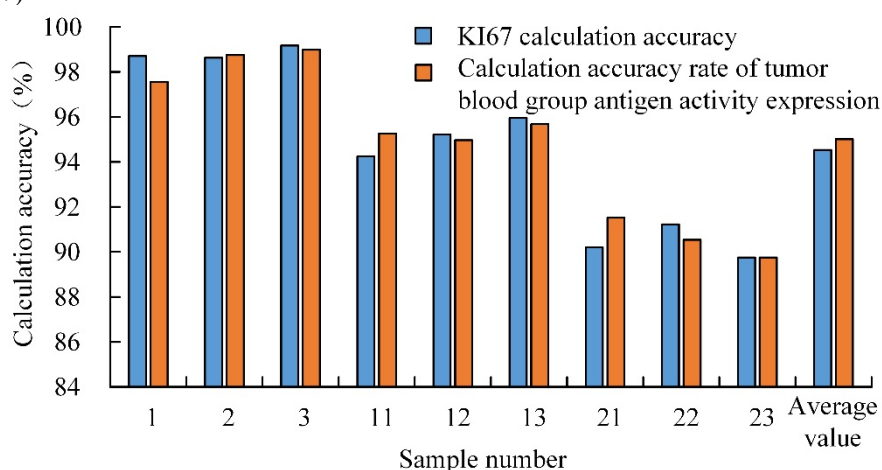
**Methods:** The mathematical model of the tumor sphere experiment for real-time cell cycle imaging was studied. The mathematical form of the model is a partial differential equation system formed by the coupling of second-order nonlinear parabolic equations, first-order hyperbolic equations, and elliptic equations. The model is suitable for describing the key characteristics of heterogeneity within a single tumor cell.

**Results:** The study selected 30 cervical cancer patients as samples, of which 10 were in the early stage of the disease. Another 10 were in the middle stage of the disease. The last 10 were in the late stage of the disease. The three groups of cells were judged using commonly used medical standards and mathematical models. The evaluation results of the three were compared. Some statistical results of calculation accuracy are shown in Fig. 1.

The results show that the accuracy rate calculated by the mathematical model is inversely proportional to the development of the disease course of cervical cancer, that is, the accuracy rate is higher in the early stage of the disease course, and lower in the late stage of the disease course. Specifically, the calculated KI67 index has an average accuracy rate of 94.63% compared with the value detected by medical means. Compared with the results obtained by blood test, the average accuracy rate of the tumor blood group antigen activity expression calculated by the mathematical model is 95.01%.

**Conclusion:** The study proposed a mathematical model with high accuracy, which was used to qualitatively analyze the growth law of tumor cells. The research conclusion shows that the accuracy rate of the model can reach more than 85%, but the accuracy rate will decrease with the development of the disease.

**Funding:** The research is supported by: Hubei Chinese vocational education society topic: Based on the analysis of the grey Hubei province vocational education personnel training scheme for rural migrant workers empirical research (No. HBZJ2022097).



**Fig. 1. Calculation accuracy statistical results.**

## 09. Application of microsensor in monitoring physiological data of patients with uterine cancer

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**Objectives:** Nowadays, women are experiencing more pressure in workplace and in family life. Because of the particularity of women's body structure, long-term stress will lead to women suffering from uterine cancer. Uterine cancer is divided into cervical cancer and uterine body cancer. The treatment of cancer in the medical community is still in the exploratory stage. As a non drug intervention measure, micro sensors have attracted extensive attention in many fields and achieved good clinical effects. Therefore, research on the use of micro sensors to monitor the physiological data of patients with uterine cancer is studied, hoping to achieve better results and help relieve patients' symptoms.

**Methods:** 88 patients with uterine cancer in a hospital were selected as research objects. First, the basic information of patients was collected and analyzed to avoid subjective factors affecting the experimental results. Then 88 patients were randomly divided into experimental group and control group. Both groups of patients received routine treatment. The experimental period lasted for three months. During the process, micro sensors were used to monitor the physiological data of the patients in the experimental group, and the monitored data were used to formulate patients' later treatment. The control group did not carry out any monitoring and only carried out routine treatment. Every month, the changes of three clinical detection indicators namely vaginal bleeding, vaginal discharge, and whether there are polyps in the cervix or vulva. These three indicators were used as the basis for judging the severity of symptoms of patients with uterine cancer. Set "10" as the most serious level. The smaller the value, the smaller the symptoms.

**Results:** After three months of experiment, the data collected are shown in Table 1 below.

As can be seen from the above Table 1, the experimental group has low index scores, which indicates that the micro-sensor has an obvious remission and therapeutic effect on the symptoms of uterine cancer patients.

**Conclusion:** In order to better understand the symptoms of patients with uterine cancer, the study proposed to use

micro sensors to monitor the physiological data of patients during treatment to assist treatment. The results showed that the scores of the experimental group were significantly lower during the treatment process of using micro sensors to monitor the patients' indicators. The above results show that the use of micro sensors for uterine cancer patients has a better effect.

**Table 1. Index value changes of research objects.**

Time	Vaginal bleeding		Vaginal discharge		Cervical or vulva polypoid	
	Experimental group	Control group	Experimental group	Control group	Experimental group	Control group
Before treatment	7	8	7	8	7	8
After treatment	5.5	7	4.5	6.5	5	6

## 10. Research progress of intelligent sensing system of cancer patient rehabilitation robot

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**Objectives:** To investigate the treatment of cognitive impairment in postoperative rehabilitation of gynecologic oncology patients, this study recorded the treatment effect of a cognitive impairment rehabilitation robot under an intelligent perception system and a traditional rehabilitation robot on postoperative cognitive impairment of gynecologic oncology patients. The study also further explored the future research direction of cognitive impairment rehabilitation robots under intelligent perception systems through comparative analysis.

**Methods:** Gynecologic oncology patients treated at our hospital between 2020 and 2021 were selected for the study, and the patients were divided into a severe cognitive impairment group and a mild cognitive impairment group according to their degree of postoperative cognitive impairment. The number of patients in the severe cognitive impairment group and the mild cognitive impairment group was calculated to be 28 and 60, respectively. The patients in the severe cognitive impairment group were randomly and equally divided into two groups, and different rehabilitation robots were conducted to provide cognitive training to them. Among them, the cognitive impairment rehabilitation robot under the intelligent perception system was the experimental group, the traditional rehabilitation robot was the control group, and the mild cognitive impairment group was set up by the same method. A homemade cognitive impairment scale was used to record the scores of patients before and after cognitive training.

**Results:** In the group with severe cognitive impairment, the number of patients with normal cognition, mild cognitive impairment, moderate cognitive impairment, and severe cognitive impairment in the experimental group after cognitive rehabilitation training were 2, 3, 5, and 4, respectively. The number of patients with normal cognition, mild cognitive impairment, moderate cognitive impairment, and severe cognitive impairment in the control group after cognitive rehabilitation training were 0, 0, 2, and 12, respectively. In the mild cognitive impairment group, the numbers of patients with normal cognition, mild cognitive impairment, moderate cognitive impairment, and severe cognitive impairment in the experimental and control groups after cognitive rehabilitation training were 28, 2, 0, 0, and 5, 12, 9, and 4, respectively. The detailed results are shown in Table 1.

**Conclusion:** Comparing the number of patients with cognitive impairment after rehabilitation training in different groups, it was found that the cognitive impairment rehabilitation robot with an intelligent perception system had a significant improvement in the cognitive impairment of patients.

**Table 1. Number of patients with different levels of cognitive impairment after rehabilitation training.**

Group	Normal	Mild	Moderate	Severe
Severe cognitive impairment group (28)				
Experimental group (14)	2	3	5	4
Control group (14)	0	0	2	12
Mild cognitive impairment group (60)				
Experimental group (30)	28	2	0	0
Control group (30)	5	12	9	4

## 11. Clinical effect of sham feeding combined with acupoint timing massage on abdominal



## distension after gynecological tumor operation

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**Objectives:** This paper aims to study the clinical effect of the sham feeding method combined with acupoint timing massage on abdominal distension after gynecologic tumor laparotomy and provide an effective nursing plan for patients with gastrointestinal function recovery after surgery.

**Methods:** 160 gynecological tumor patients hospitalized in Department of Gynecology of S Provincial Hospital from August 2019 to September 2020 were selected as research objects and randomly divided into four groups. Group A adopted routine nursing, group B adopted routine nursing and sham feeding, group C adopted routine nursing and acupoint timing massage, and group D adopted sham feeding combined with acupoint timing massage based on routine nursing. The recovery time of gastrointestinal function, degree of gastric distension, gastrointestinal recovery effect and other indicators of the four groups of patients after laparotomy were observed, and the data were statistically analyzed by using SPSS22.0 software.

**Results:** The difference in general data of the four groups of patients is not statistically significant ( $p > 0.05$ ), which indicates that the four groups of patients can be compared. The comparison results of the four groups of patients are shown in Table 1. Among them, there were significant differences among the four groups in the time of the first anal exhaust, the time of the first defecation, the recovery time of bowel sounds, gastrointestinal function score and anxiety score ( $p < 0.05$ ).

**Conclusion:** Sham feeding, acupoint timing massage and the combination of the two methods can effectively shorten the recovery time of gastrointestinal function of patients after surgery and promote the recovery of gastrointestinal function of patients after surgery. Among them, the sham feeding method combined with acupoint timing massage has the best clinical effect on abdominal distension after gynecologic tumor laparotomy.

**Funding:** The research is supported by: An University Student Innovation and Entrepreneurship Training Program Project (S202110541003X).

**Table 1. Comparison results of four groups of patients.**

	Group A	Group B	Group C	Group D
Time of first anal exhaust	38.67 ± 19.68	25.97 ± 17.13	33.00 ± 16.97	25.92 ± 13.14
First defecation time	72.75 ± 33.68	58.90 ± 26.82	69.88 ± 30.36	56.15 ± 36.83
Recovery time of bowel sounds	35.41 ± 19.65	23.57 ± 16.88	30.54 ± 17.05	21.71 ± 12.53
Gastrointestinal function	4.26 ± 1.52	3.66 ± 1.41	4.14 ± 1.59	3.29 ± 1.40
Anxiety score	3.94 ± 1.41	2.66 ± 1.66	3.67 ± 1.45	2.13 ± 0.99

## 12. Feasibility study of embedded blood glucose detection system in gynecological tumor cell detection

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**Objectives:** To construct a blood glucose detection system with low cost, high sensitivity and low trauma, and apply the system to gynecological tumor cell detection to improve the reliability of tumor cell detection.

**Methods:** This study selected the lymph nodes of 1,456 patients who received gynecological tumor screening in our hospital from 01 January 2015 to 31 December 2021. A total of 182 lymph nodes diagnosed with ovarian cancer, 191 lymph nodes diagnosed with endometrial cancer, 102 lymph nodes diagnosed with cervical cancer and 221 lymph nodes diagnosed with breast cancer were selected for detection. According to the different detection means, they were divided into research group and control group. The research group used embedded blood glucose detection, and the control group used conventional detection means. The evaluation indexes include Mean Average Precision (mAP), accuracy, false alarm rate and false alarm rate.

**Results:** Lymph nodes positive for gynecological neoplasm of different categories were detected. The test results of the research group and the control group are shown in Table 1. The accuracy rates of ovarian cancer and endometrial

cancer cells in the research group were 92.45% and 91.57%, respectively, which were significantly higher than those in the control group ( $p < 0.05$ ). The accuracy of cervical cancer and breast cancer cell detection in the research group was 94.21% and 95.18%, respectively, which were significantly higher than those in the control group ( $p < 0.05$ ). The calculation shows that mAP of the embedded blood glucose detection system is 93.35%, and the mAP of routine detection is 83.37%. It shows that embedded blood glucose detection has better detection accuracy.

**Conclusion:** The embedded blood glucose detection system has better accuracy in the detection of gynecological tumor cells, and has good research and application value.

**Table 1. Gynecological tumor cell test results.**

Cancers	Number of lymph nodes	Accuracy (%)		False alarm rate (%)		Missing alarm rate (%)	
		Research group	Control group	Research group	Control group	Research group	Control group
Ovarian	182	92.45*	83.28	3.41	4.34	4.14*	12.38
Endometrial	191	91.57*	82.19	4.87*	8.46	3.56*	9.35
Cervical	102	94.21*	84.43	5.22	5.99	0.57*	9.58
Breast	221	95.18*	83.57	3.11*	9.34	1.71*	7.09

Note: \* indicates a significant difference compared with the control group,  $p < 0.05$ .

### 13. Study on the therapeutic effect of network pharmacology combined with traditional Chinese medicine Arnebia on patients with cervical cancer

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**Objectives:** Cervical cancer is a common gynecological disease and seriously endangers the health of women, with the second incidence rate among women. Although the current treatment methods for cervical cancer have certain therapeutic effects, there are also unavoidable limitations. The active substances in Lithospermum have the effects of anti-tumor, inhibiting the growth of breast cancer and melanoma, and play an important role in the treatment of cervical cancer. Network pharmacology focuses on exploring the multiple components, multiple targets, and multiple ways of action of traditional Chinese medicine. Therefore, this study explores the therapeutic effect of Arnebia on patients with cervical cancer based on the background of network pharmacology.

**Methods:** A total of 120 patients with cervical cancer admitted to our hospital from January 2018 to January 2022 were selected for the experiment. According to clinical stages, the patients were divided into three groups: Early stage (61 patients), Middle stage (41 patients), and Late stage (18 patients), and they were treated with Shikonin drug intervention respectively. In the experiment, KPS (Karnofsky) scale was selected to evaluate the physical function of patients, and the proportional risk (COX) model was used for single-factor analysis.

**Results:** Table 1 shows the single-factor analysis of the intervention effect of Arnebia after operation in three types of patients. For patients in the early and middle stage, Lithospermum can be used as an independent factor of intervention ( $p < 0.05$ ), that is, patients at this stage can influence their survival and prognosis through the drug Lithospermum. For patients with advanced stage, Arnebia could not affect their survival and prognosis ( $p > 0.05$ ).

**Conclusion:** To explore the intervention effect of traditional Chinese medicine Arnebia on patients with cervical cancer under the background of network pharmacology, 120 patients with cervical cancer were treated with Arnebia. The experimental results showed that Arnebia has a certain intervention effect on patients with cervical cancer in the early and middle stage, but the effect on patients in the late stage is not obvious.

**Table 1. Single factor analysis of the effect of Lithospermia intervention on three types of patients after surgery.**

Influence factor	Early stage		Middle stage		Late stage	
	KPS score of the first visit	Treatment of Arnebia	KPS score of the first visit	Treatment of Arnebia	KPS score of the first visit	Treatment of Arnebia
B	-1.215	-0.132	-1.321	-0.145	-1.656	-0.235
RR	0.298	0.876	0.263	0.864	0.253	0.769

<i>p</i>	<0.05	<0.05	<0.05	<0.05	>0.05	>0.05
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#### 14. Exploring the therapeutic mechanism of Huayu Pill on breast cancer patients based on network pharmacology theory and molecular docking technology

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**Objectives:** The effective components and mechanism of Huayu Pill in the treatment of breast cancer patients were discussed through the theoretical knowledge of network pharmacology and molecular docking technology.

**Methods:** First of all, the information of traditional Chinese medicine in Huayu Pill is searched to obtain its active components and molecular targets. Then, by searching DrugBank, (Therapeutic Target Database, TTD) TTD, (Online Mendelian Inheritance in Man, OMIM) OMIM and (Comparative Toxicogenomics Database, CTD) CTD databases, we screened out the related targets of breast cancer, and used UniProt database to annotate the target genes. The target network diagram of Huayu Pill and breast cancer components was constructed through the mapping software Cytoscape. At the same time, the core target topology network diagram was drawn using the plug-ins BisoGenet and CytoNCA, and the (Gene ontology, GO) GO function and (Kyoto Encyclopedia of Genes and Genomes, KEGG) KEGG pathway enrichment analysis of the intersection targets of Huayu Pill and breast cancer were carried out. 30 breast cancer patients admitted to a hospital from 2020 to 2021 were selected as research subjects, and 30 breast cancer patients were randomly divided into control group and experimental group, 15 in each group. The patients in the control group were treated with conventional therapy, while the patients in the experimental group were treated with Huayu Pill on the basis of conventional therapy. The treatment lasted for one course, and the tumor markers, hematopoietic function indicators and immune function indicators of the two groups of patients after treatment were compared and analyzed.

**Results:** Table 1 shows the comparison of tumor markers between the two groups of patients after a course of treatment. Carcinoembryonic antigen CEA ( $\mu\text{g/L}$ ), glycoantigen CA125 (U/mL), and tumor-specific growth factor TSGF (U/L) were compared before and after treatment in the two groups, respectively. After the treatment of Huayu Pill, the scores of the three indicators in the experimental group were significantly lower than those in the control group. This shows that Huayu Pill is helpful to the treatment of breast cancer patients.

**Conclusion:** According to the theoretical knowledge of network pharmacology and molecular docking technology, the active ingredient of Huayu Pill in treating breast cancer is quercetin, which mainly involves virus infection and other cancer related pathways. At the same time, Huayu Pill is also helpful for the treatment of breast cancer patients.

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**Table 1. Comparison of tumor markers between two groups of patients.**

Group	Number of Cases	CEA ( $\mu\text{g/L}$ )		CA125 (U/mL)		TSGF (U/L)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Control group	15	26.19 $\pm$ 0.31	8.28 $\pm$ 0.32*	65.93 $\pm$ 6.75	43.52 $\pm$ 1.35*	95.35 $\pm$ 2.15	83.34 $\pm$ 9.63*
Experimental group	15	26.26 $\pm$ 0.26	4.29 $\pm$ 0.35*	65.81 $\pm$ 6.85	36.92 $\pm$ 1.26*	95.40 $\pm$ 2.18	75.22 $\pm$ 8.27*
<i>t</i>	-	0.984	37.856	0.125	20.998	0.178	2.324
<i>p</i>	-	>0.05	<0.05	>0.05	<0.05	>0.05	<0.05

Note: Compared with before treatment, \* $p < 0.05$ .

#### 15. Application of computer image recognition technology in early diagnosis and detection of gynecological tumors

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**Objectives:** Gynecologic tumor disease is a common disease of women, which seriously threatens women's health and quality of life. Early diagnosis can effectively improve the cure rate of cancer. Therefore, to improve the efficiency of early diagnosis, the application value of computer image recognition technology in early diagnosis and detection of gynecological tumor diseases was discussed.

**Methods:** 140 patients with gynecological tumors in a hospital from May 2017 to March 2019 were collected as the research object for pathological cell image information collection. The collected results were randomly divided into experimental group (70 cases) and control group (70 cases). The cell images of the control group were manually diagnosed and recognized by doctors. The cell image of the experimental group was separated from the background by image segmentation method based on reinforcement learning, and then the cells were classified by decision tree classifier. Then the research established the lung cancer cell pathological map library and compared and judged the cells. After the diagnosis, we compared the accuracy of the two diagnostic methods.

**Results:** SPSS22.0 was used to analyze the data. The counting data was expressed in n (%), and  $p < 0.05$  means that the difference was statistically significant. The statistical results are shown in Table 1.

Table 1 showed that the recognition rate of cervical cancer in the control group was 7.06% lower than that in the experimental group. The recognition of uterine leiomyoma carcinoma was 4.83% lower, and the recognition rate of ovarian cyst was 7.35% lower. The recognition accuracy of gynecological tumor diseases in the experimental group was significantly higher than that in the control group, and the difference between the two groups was statistically significant ( $p < 0.05$ ).

**Conclusion:** The accuracy and success rate of early cytopathologic diagnosis of gynecological tumor diseases using computer image recognition technology are higher than those of manual diagnosis, which overcomes the problem of subjectivity and lack of objective criteria in manual diagnosis. Therefore, the application of computer image recognition technology in the early diagnosis of gynecological tumors can effectively improve the diagnostic accuracy of such diseases, alleviate patients' pain, provide accurate imaging support for the implementation of targeted treatment, and help improve the prognosis of patients.

**Table 1. Statistics of diagnosis results.**

Cancer category	Control group	Experimental group	<i>t</i>	<i>p</i>
Recognition rate of cervical cancer (%)	94.01	86.95	14.808	<0.001
Recognition rate of uterine leiomyoma cancer (%)	85.46	80.63	10.172	<0.001
Recognition rate of ovarian cyst (%)	89.32	81.97	15.479	<0.001

## 16. Study on diagnosis of gynecological cervical lesions based on computer contrast-enhanced ultrasound technology

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**Objectives:** Uterine diseases are common gynecological diseases. In clinical diagnosis, the nature of the patient's disease is generally judged according to the patient's clinical symptoms. However, it is difficult to judge whether the patient has early malignant uterine lesions in time for early diagnosis based on clinical symptoms alone. In order to improve the clinical diagnosis and treatment of gynecological diseases, the application value of computer contrast-enhanced ultrasound in the early diagnosis of gynecological cervical diseases is studied.

**Methods:** From January 2020 to February 2021, 98 patients with cervical lesions were selected. All patients underwent contrast-enhanced ultrasound examination. The difference between the results of contrast-enhanced ultrasound and ordinary ultrasound was compared and analyzed.

**Results:** Table 1 shows the difference in the accuracy of diagnosis of patients' lesions under the two diagnostic methods. The study is based on surgical and pathological results. It can be seen that the number of benign and malignant lesions in patients diagnosed by contrast-enhanced ultrasound has great similarity with the surgical and pathological results, and the accuracy rate is significantly different from that of ordinary ultrasound.

**Conclusion:** Early diagnosis of gynecological cervical lesions is the basis of its clinical treatment. The application value of contrast-enhanced ultrasound in the diagnosis of cervical lesions was studied. The results showed that the diagnostic accuracy of computer contrast-enhanced ultrasound was significantly higher than that of conventional ultrasound, and it was worth popularizing in the clinical diagnosis and treatment of cervical malignant lesions.

**Table 1. Evaluation of diagnostic accuracy.**

	Benign lesion	Malignant lesion	Accuracy (%)
Ordinary ultrasound	17	41	70.83
Contrast-enhanced ultrasound	24*	61*	98.39
Surgical and pathological results	24	62	-

Note: \* indicates a significant difference from ordinary ultrasound ( $P < 0.05$ ).

## 17. Application of tumor marker CA125 in the diagnosis of ovarian cancer in female construction managers

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**Objectives:** To investigate the effect of the use of construction optimization in construction quality management on CA125 (Carbohydrate antigen) marker levels in female engineering managers, and to observe the effect of construction management optimization using construction optimization combined with acupuncture treatment on the emotional state and CA125 levels in female engineering managers suffering from primary menstruation. To study whether the emotional state of female engineering managers in the combination of workflow optimization and acupuncture treatment for epithelial ovarian cancer can regulate the serum CA125 level of the subjects.

**Methods:** Seventy-four female engineering managers with primary menstruation of epithelial ovarian cancer were randomly divided into control group and experimental group, 37 in each. In the experimental group, the engineering managers was assigned to the assembly construction project site for acupuncture treatment twice a week. Before and after the end of the project, the changes of serum CA125 in the two groups were observed.

**Results:** After the management work assignment intervention, the serum CA125 levels of engineering managers in the experimental group decreased compared with those before treatment.  $p < 0.05$  indicates a statistical difference between the serum CA125 levels before and after the experiment. The serum CA125 levels of engineering managers in the control group decreased compared with those before the treatment.  $p < 0.05$  indicates a statistical difference between the serum CA125 levels before and after the experiment. After treatment, the total effective rate of treatment in the experimental group was 96.62%, and that in the control group was 68.21%, which was significantly better than that in the control group.

**Conclusion:** The effect of the combined treatment with acupuncture on CA125 marker levels in female engineering managers with primary dysmenorrhea, compared with the non-optimized engineering quality management program for primary dysmenorrhea, suggests that the optimization of female engineering managers is effective in improving the affective factors of primary dysmenorrhea and in reducing levels of CA125.

**Funding:** The research is supported by: Qinhuangdao Science and Technology Research and Development Plan Project (Project No. 202005A001).

**Table 1. Comparison of the CA125 rate of each indicator between the two groups.**

Group	<i>n</i>	Period	CA125
Experimental group	37	Before treatment	749.38 ± 65.39
		After treatment	215.87 ± 48.91
Control group	37	Before treatment	751.51 ± 70.26
		After treatment	301.62 ± 51.52

## 18. Value of multi-row helical computed tomography considering interactive design in the diagnosis of cervical cancer lymph node metastasis

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**Objectives:** Interaction Design Multi-row Computed Tomography (IDMCT) is widely used in the evaluation of lymph node metastasis of cervical cancer. Accurate recognition of lymph node metastases can help to initially evaluate the best treatment mode for cervical cancer. This paper studied the clinical prediction value of IDMCT scan for cervical

cancer lymph node metastasis.

**Methods:** 348 patients who received radical cervical cancer resection in a hospital of Nanjing in 2020 were selected as experimental objects in the research. Lymph nodes of patients were collected for postoperative examination. The confirmed positive lymph nodes were randomly divided into IDMCT group and conventional group. The IDMCT group was confirmed by IDMCT scan, while the conventional group received a routine scan. This paper analyzes the risk factors of lymph node metastasis through multi-factor logistic regression. The Area Under Curve (AUC) and Receiver Operating Characteristic (ROC) curves of the two groups were compared. The sensitivity, specificity, and precision of IDMCT diagnostic value in cervical cancer lymph node metastasis were evaluated.

**Results:** 14,738 lymph nodes were collected from the 348 patients for postoperative examination, and 1874 lymph nodes were confirmed positive by pathological biopsy. Multivariate logistic regression showed that the length of primary tumor, depth of tumor invasion, nerve invasion, vascular invasion, and soft tissue invasion were independent factors related to lymphatic metastasis of cervical cancer. ROC curve analysis showed that the AUC of the IDMCT group was 0.823. Compared with the postoperative pathological results, the sensitivity, specificity and precision of the diagnosis of cervical cancer lymphatic metastasis were 83.5%, 82.6% and 83.2%, respectively. The AUC of the routine scan was 0.786. Compared with the postoperative pathological results, the sensitivity, specificity and precision of the diagnosis of lymphatic metastasis of cervical cancer were 74.9%, 74.3% and 72.8%, respectively. The comparison results are shown in Fig. 1.

**Conclusion:** IDMCT scan is better than conventional scan in terms of sensitivity, specificity, and precision for more accurate recognition of cervical cancer lymphatic metastasis. This topic provides more professional reference for clinical selection of cervical cancer treatment methods.

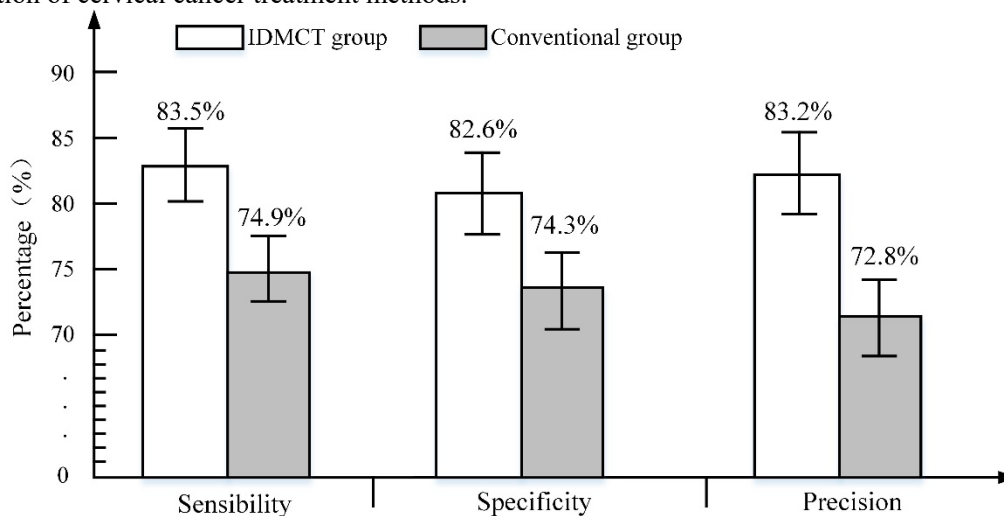


Fig. 1. Comparison results of index evaluation between the two groups.

## 19. Analysis of chemotherapy and evaluation of breast cancer with ultrasonic technology based on electromechanical control

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**Objectives:** Breast cancer is a common disease in gynecological tumors, and its diagnosis and treatment methods are gradually diverse, among which adjuvant chemotherapy is one of the most common ways in the treatment of breast cancer. Ultrasound technology is often used in the clinical diagnosis of breast cancer and efficacy evaluation. The conventional control mode of ultrasound technology mostly uses human-computer integration, so inevitably it will result in diagnostic bias and misdiagnosis in chemotherapy diagnosis and lead to different chemotherapy effects of breast cancer. This topic mainly explores the influence of electromechanical control of ultrasonic technology on chemotherapy and the evaluation of breast cancer.

**Methods:** 128 patients with breast cancer were selected as the research objects and were divided into two groups, observation group and experimental group. Each group had 64 patients. The ultrasonic technology in the observation group was controlled by human-machine combination, and the ultrasonic technology in the experimental group was controlled by electromechanical control. The two groups performed ultrasound examinations on breast cancer patients in different control modes to ensure that the examination site, examination sequence, and examination times were the same. Finally, the information on the lesions was recorded for comparison and judgment.

**Results:** Table 1 shows the detection results of the size of the lesions before and after chemotherapy by two inspection

methods. Before chemotherapy, there was no statistically significant difference between the maximum diameter and the upper and lower diameters of the lesions after ultrasound detection by the two methods ( $p > 0.05$ ). After chemotherapy, the maximum diameter and the upper and lower diameters of the lesions detected by electromechanically controlled ultrasound were significantly less than those by human-machine combined ultrasound, with a statistically significant difference ( $p < 0.05$ ).

**Conclusion:** In order to further improve the effect of ultrasonic detection technology on the diagnosis and chemotherapy evaluation of breast cancer, the control mode of ultrasonic detection was improved through electromechanical control technology. In the experiment, the diagnostic accuracy of breast cancer patients has been improved under the electromechanical control mode, which has obvious advantages in the evaluation of chemotherapy.

**Table 1. The detection results of the size of lesions before and after chemotherapy by two examination methods.**

Inspection method	Maximum diameter		Upper and lower diameters	
	Before chemotherapy	After chemotherapy	Before chemotherapy	After chemotherapy
Experimental group	16.20 ± 2.39	11.23 ± 2.30	30.13 ± 4.19	19.48 ± 5.42
Observation group	16.14 ± 2.50	15.59 ± 2.38	29.88 ± 3.02	21.98 ± 5.55
<i>t</i>	0.207	14.789	0.438	3.443
<i>p</i>	>0.05	<0.05	>0.05	<0.05

## 20. Intervention effect of Da Vinci robot system on obese patients with gynecological malignant tumors

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**Objectives:** With the rapid development of social economy, people's life quality has been gradually improved. Some people are increasingly exposed to obesity due to their long-term bad life and eating habits. Patients with basic metabolic diseases will encounter many problems in clinical practice, so it is difficult to experiment. Da Vinci robot has a relatively reasonable ergonomic structure and three-dimensional surgical field of vision, showing obvious advantages such as short operation time and less postoperative bleeding, which can meet the requirements of clinical diagnosis and treatment.

**Methods:** The study selected 658 patients from a hospital as the research object, and divided them into two groups based on the surgical nature of the selected cases: Robot surgery and operation by other means. The two groups of patients were treated with the same nursing methods, and the data collected during the operation were used to assist in the later treatment of the patients. The perioperative period lasted for one month. During the process, the data changes of six indicators including operation time, postoperative bleeding, number of malignant tumors, postoperative hospitalization time, postoperative exhaust time, and hospitalization expenses were recorded. The above indicators were used as the basis for judging the degree of treatment remission of patients, and all data were statistically analyzed with SPSS 24.0.  $p < 0.05$  indicates that the difference is statistically significant.

**Results:** After one month's observation, the data collection before and after the operation is shown in Table 1. It can be seen from the above table that there are statistically significant differences in the amount of intraoperative bleeding, the number of malignant tumor resections, the postoperative exhaust time, and the hospital expenses between robot surgery and other surgery groups ( $p < 0.001$ ); There was no significant difference between the operative time ( $p = 0.325$ ) and the postoperative hospital stay ( $p = 0.281$ ).

**Conclusion:** To reduce the discomfort reaction of patients with obese gynecological malignant tumors before and after surgery, the research proposed to use Da Vinci robot to operate on patients. The results showed that there were statistical differences in the amount of intraoperative bleeding, the number of tumor resections, the time of postoperative exhaust, and the cost of hospitalization in the robot surgery, and they were significantly better than those in the other surgery groups, indicating that the use of Da Vinci robot has a better effect on patients.

**Funding:** The study was supported by the "Guangzhou Railway Polytechnic talent research launch project (No. GTXYR2005)".

**Table 1. Perioperative results of obese patients with gynecological malignancies during different operations ( $\bar{x} \pm s$ ).**

Operation mode	Number of cases	Number of cases	Number of cases	Number of cases
Robotic surgery	330	198.58 ± 57.97	125.52 ± 121.37	27.48 ± 13.08
Operation by other means	328	195.74 ± 78.20	490.51 ± 516.11	18.74 ± 15.00
<i>p</i>	-	0.325	<0.001	<0.001
Operation mode	Number of cases	Number of cases	Number of cases	Number of cases
Robotic surgery	330	10.21 ± 4.55	1.78 ± 0.63	68114.79 ± 13141.57
Operation by other means	328	13.36 ± 10.28	2.42 ± 1.18	45148.24 ± 24152.33
<i>p</i>	-	0.281	0.001	<0.001

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