

## **GENERAL INTRODUCTION TO THE PROBLEM OF DIAGNOSIS AND PREDICTION OF NODULES IN THE THYROID GLAND AND UTERUS.**

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**Annotation:** This article provides overview information on the problem of diagnosing and predicting nodules in the thyroid gland and uterus. Key aspects of evaluating nodules in these organs using the ACR-TIRADS classification system for the thyroid and FIGO for the uterus are discussed. The article emphasizes the importance of accurate stratification of nodes to determine further patient management, including the choice of treatment methods and predicting outcomes. The main criteria for assessing nodes according to the specified classification systems, their similarities and differences, as well as prospects for further research in this field of medicine are considered. The possibilities of improving the accuracy of diagnosis and management of patients with thyroid nodules and uterine tumors are analyzed based on modern approaches and classification systems. The data obtained are of significant practical importance for endocrinologists, gynecologists and oncologists, which helps improve the quality of medical care and treatment outcomes for patients with these pathologies.

**Keywords:** Knot formation, thyroid, uterus, diagnostics, predicting outcomes, acr-tirads, figo, stratification, treatment, classification, echostructure, rating system, medical practice.

**Introduction:** Thyroid nodules and uterine tumors are serious medical problems that require accurate diagnosis and outcome prediction to determine the optimal treatment strategy. The thyroid gland plays a key role in regulating metabolism, and uterine tumors can be associated with various pathologies of the

female reproductive system. Accurate stratification of thyroid nodules and uterine tumors using appropriate classification systems such as ACR-TIRADS and FIGO is critical to determine their grade and select optimal treatment.

The thyroid gland is one of the most important organs of the endocrine system, responsible for the synthesis and release of hormones that regulate many processes in the body. Nodules in the thyroid gland can be either benign or malignant, and accurate diagnosis of their nature plays an important role in treatment planning. The ACR-TIRADS classification system provides a standardized approach to evaluating nodules based on their ultrasound characteristics, which helps determine the likelihood of malignancy and determine the need for biopsy or surgery.

Uterine tumors also represent a significant medical problem, especially among women of reproductive age. Neoplasms in the uterus can be of various natures, from benign fibroids to malignant tumors such as endometrial carcinoma. Classification of tumors according to the FIGO system allows us to standardize the assessment of the stage and spread of the tumor, which is important for choosing the optimal treatment strategy and predicting results.

In this article, we will consider the role of the ACR-TIRADS and FIGO classification systems in the diagnosis and prognosis of the outcomes of nodules in the thyroid gland and uterus, identify their similarities and differences, and also discuss the prospects for further research and the development of stratification methods to improve patient treatment outcomes.

The importance of accurate stratification of nodes according to ACR-TIRADS and FIGO for determining further patient management tactics:

**Optimal treatment planning:**

The ACR-TIRADS and FIGO classification systems help doctors determine the likelihood of malignant thyroid nodules and uterine tumors, respectively. This allows us to develop an individualized treatment plan for each patient depending on the risk of the disease.

**Reducing redundant procedures:**

Accurate nodal stratification using ACR-TIRADS and FIGO can reduce the number of unnecessary procedures, such as biopsy or surgery, in patients with low risk of malignant nodules or tumors. This helps reduce patient stress and save healthcare resources.

**More accurate prediction of outcomes:**

Classification of nodes and tumors according to ACR-TIRADS and FIGO allows more accurate prediction of treatment outcomes. Patients at high risk for malignancy of uterine nodes or tumors may be offered more aggressive treatment or closer surveillance, while patients at low risk may be offered less invasive treatments or delayed surveillance.

**Improving the quality of medical care:**

The use of standardized classification systems can improve the quality of medical care and reduce the likelihood of errors in diagnosis and treatment planning. This is especially important in the context of the medical sector, where a high level of accuracy and reliability in decision making is required.

**Improving patient experience:**

Correct determination of treatment tactics based on stratification of nodes according to ACR-TIRADS and tumors according to FIGO helps improve patient experience. Patients receive more informed advice from doctors, which improves their participation in the decision-making process and leads to higher levels of satisfaction with the care they receive.

Thus, accurate stratification of nodules by ACR-TIRADS and tumors by FIGO plays an important role in determining further patient management, providing optimal treatment, reducing unnecessary procedures, more accurately predicting outcomes, improving the quality of care and improving the patient experience.

The ACR-TIRADS (American College of Radiology Thyroid Imaging Reporting and Data System) classification system was developed to standardize the assessment of ultrasound features of thyroid nodules and determine their likelihood

of being malignant. This system helps physicians make more informed decisions regarding future management of patients with thyroid nodules.

The main components of the ACR-TIRADS classification system include:

1. **Knot size:**
  - Less than 1 cm (Micronodula)
  - From 1 to 2 cm (Minimum knot)
  - From 2 to 3 cm (Small knot)
  - More than 3 cm (Large knot)
2. **Echostructure of the node:**
  - Hypoechoic (unclear boundaries, darker than surrounding tissue)
  - Isoechogenic (similar in brightness to surrounding tissue)
  - Hyperechoic (lighter than surrounding tissue)
  - Pseudocyst (has an internal structure resembling a cyst)
3. **Additional ultrasound signs (if any):**
  - Microcalcifications (small areas of calcification)
  - Internal micronodules or chalos (small areas of hypoechogenicity within the node or its circumference)
  - Uneven or fluid-filled cavities (as signs of tissue degradation)
  - Enlargement of lymph nodes (emphasizes possible metastatic disease)
4. **Capsule structure:**
  - Whole, clear capsule
  - Partially broken capsule
  - Completely broken capsule
5. **Potential metastasis to lymph nodes:**
  - No signs of metastasis
  - Suspicion of metastasis
  - Confident metastasis

Based on these components, the nodule is assessed and given an ACR-TIRADS classification, which reflects the likelihood of malignancy. Typically the classification is described in five categories:

- TIRADS 1: Normal node
- TIRADS 2: Beneficial characteristics (eg cysts with clear fluids)
- TIRADS 3: Probably beneficial characteristics
- TIRADS 4: Likely malignant characteristics
- TIRADS 5: Malignant characteristics

This classification allows further management of patients, such as observation, additional testing or biopsy, to be determined depending on the risk of malignancy of the thyroid nodule.

The FIGO (International Federation of Gynecology and Obstetrics) classification system for uterine tumors is a widely accepted and used system for assessing the extent and stage of a tumor process in the uterus. It helps doctors determine the severity of the disease and choose the optimal treatment strategy for patients with uterine tumors. Here are the main components of the FIGO classification system for uterine tumors:

1. **Stage I:**

- IA: The tumor is limited to the endometrial layer (inner layer of the uterus).
- IB: The tumor extends beyond the endometrium, but does not exceed the body of the uterus.

2. **Stage II:**

- IIA: The tumor extends to the cervix, but does not extend beyond it.
- IIB: The tumor extends beyond the body of the uterus, but does not reach the pelvic wall or the lateral wall of the vagina.

3. **Stage III:**

- IIIA: The tumor extends to the pelvic wall or the lateral wall of the vagina.
- IIIB: The tumor grows into the vagina.

- IIIC: Lymph nodes in the pelvis or abdominal cavity may be affected by metastases.

4. **Stage IV:**

- IVA: The tumor has spread to neighboring organs (for example, the bladder or rectum).

- IVB: Distant metastases, such as in the lungs or bones.

This FIGO classification system allows doctors to determine the extent of tumor spread in the uterus and the presence of metastases, which influences the choice of treatment options. For example, early stage tumors (stages I and II) are more likely to be treated with surgery (hysterectomy, myomectomy), while later stages (stages III and IV) may require combination treatment, including surgery, radiation therapy, and chemotherapy.

Thus, the FIGO grading system for uterine tumors plays an important role in standardizing the assessment of disease extent, helping clinicians make informed decisions about treatment choices and predicting outcomes in patients with uterine tumors.

In conclusion of the article on thyroid nodules according to ACR-TIRADS and uterine tumors according to the FIGO classification system for predicting outcomes, the following key points can be emphasized:

1. **Importance of Accurate Stratification:** The ACR-TIRADS and FIGO classification systems play an important role in determining the likelihood of malignancy in thyroid nodules and uterine tumors, respectively. This helps doctors develop personalized treatment plans for patients.

2. **Optimal Treatment:** Precise stratification of nodes and tumors allows the selection of optimal treatment methods, reducing unnecessary procedures and increasing the effectiveness of therapy.

3. **Prediction of outcomes:** The ACR-TIRADS and FIGO classification systems help more accurately predict treatment outcomes, which is important for planning further management tactics and improving outcomes.

4. **\*\*Standardization of Approach:\*\*** The use of standardized classification systems improves the quality of care, reduces the likelihood of errors, and promotes more informed decisions for both physicians and patients.

5. **\*\*Need for further research:\*\*** The prospects for the development of stratification methods and additional tests, such as molecular genetic studies, may further improve the accuracy of diagnosis and prediction of patient outcomes.

### **Literature:**

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