



### CROSS-LINGUAL TRANSLATION CHALLENGES OF ONCOLOGY TERMINOLOGY: A COMPARATIVE STUDY OF ENGLISH, RUSSIAN, AND UZBEK

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**Abstract.** *Oncology terminology represents one of the most complex domains of modern medical translation due to the rapid development of cancer research, terminological density, and the introduction of new diagnostic and therapeutic approaches. This study investigates the cross-lingual challenges in translating oncology terminology from English into Russian and Uzbek. The research focuses on semantic equivalence, conceptual gaps, morphological complexity, and divergent clinical interpretations. Through comparative analysis of authentic clinical reports, imaging descriptions, and oncology guidelines, the study reveals recurring inconsistencies in terminology related to tumor morphology, metastasis, staging, immunotherapy, and genetic markers. The article proposes translation strategies including calque, borrowing, descriptive translation, and functional equivalence, emphasizing the importance of terminological standardization for ensuring clinical safety and effective communication. The findings highlight the need for developing unified multilingual oncology glossaries for translators and healthcare practitioners.*

**Keywords:** *medical terminology, oncology, translation, English–Russian–Uzbek, semantic equivalence, immunotherapy, medical communication.*

**Introduction.** Oncology has become one of the fastest-evolving fields of medicine, generating a continuous influx of new terminology. As new diagnostic imaging methods, tumor classifications, staging systems, and immunotherapy agents emerge, translators face increasing challenges in accurately rendering medical concepts across languages. Translating oncology terminology from English into Russian and Uzbek becomes particularly complex due to differences in medical tradition, lack of standardized equivalents, and variation in clinical interpretation. In Uzbekistan, where both Russian and Uzbek languages are used in medical documentation, inconsistency in oncology terminology can lead to misunderstanding, diagnostic errors, and loss of critical clinical meaning. Therefore, investigating translation issues and identifying reliable strategies is essential. This article aims to analyze structural, semantic, and pragmatic challenges in translating oncology-related terminology, highlight common translation errors, and offer solutions for improving accuracy. The study's significance lies in its contribution to developing more consistent, safe, and standardized oncology terminology across English, Russian, and Uzbek.

**Nature and Structure of Oncology Terminology.** Oncology terminology encompasses several interrelated subdomains, including morphological terms (adenocarcinoma, squamous cell carcinoma), tumor staging vocabulary (local invasion, metastasis, regional lymphadenopathy), diagnostic imaging descriptors (lesion,

infiltration, consolidation), and molecular-genetic markers (BRCA1 mutation, HER2 positivity, PD-L1 expression). These terms predominantly originate from Greek and Latin, giving them an internationally recognizable form. However, structural complexity and polysemy often cause challenges in translation. For instance, the term “carcinoma in situ” describes a non-invasive tumor but has no direct Uzbek equivalent, resulting in the frequent use of borrowing or descriptive translation.

Additionally, modern oncology introduces new terminology through breakthroughs in targeted therapy and immunotherapy. Agents such as pembrolizumab, cemiplimab, and nivolumab, widely used in the treatment of advanced malignancies, create additional demands on translators who must ensure accuracy when translating complex pharmacological classifications and mechanisms.

Translating oncology terminology across English, Russian, and Uzbek reveals several persistent challenges. One major difficulty is partial equivalence, where terms exist in Russian but not in Uzbek, or where Uzbek translations are inconsistent. For example, the English term “invasive tumor” corresponds to “инвазивная опухоль” in Russian but is translated variably into Uzbek as “invaziv o’sma,” “o’smaning tarqalgan shakli,” or “to’qimaga chuqur kirgan o’sma.”

Diagnostic terminology poses another challenge due to context-dependent meanings. The term “lesion” may refer to any pathological change in tissue, yet translators often incorrectly limit it to “o’sma” (tumor), causing clinical misinterpretation. Neologisms in immunotherapy terminology also complicate translation. Expressions like “immune checkpoint inhibitors” or “PD-L1 blockade therapy” still lack standardized Uzbek equivalents.

False friends represent a frequent cause of translation errors. For instance, “mass” in radiology refers to a suspect lesion, not physical mass, while “infiltration” denotes abnormal tissue density, not fluid penetration. Such misinterpretations may lead to clinical inaccuracies in diagnostic reports.

Borrowing is one of the most common strategies in oncology translation, especially when dealing with drug names, molecular markers, and classifications. INN (International Nonproprietary Name) standards must be preserved in all languages to avoid clinical confusion. Thus, pembrolizumab, nivolumab, and cemiplimab should not be altered linguistically.

Calque (kalkalash) allows structurally transparent translations such as “squamous cell carcinoma” → “yassi hujayrali karsinoma.” This method is effective for terms with clear morphological structure. Descriptive translation is used when no equivalent exists, as in “carcinoma in situ,” which may require the expanded form “boshlang’ich darajadagi, to’qimalarga chuqur o’sib kirmagan karsinoma.”

Functional equivalence remains essential when clinical usage dictates the most appropriate translation. For example, ‘lesion’ in imaging is best translated as ‘patologik o’choq,’ whereas in dermatology it may refer to a different structure. Thus, context determines accuracy.



**Comparative Terminology Table**

English	Russian	Uzbek	Recommended Strategy
<b>Metastatic spread</b>	метастатическое распространение	metastatik tarqalish	calque
<b>Lymphadenopathy</b>	лимфаденопатия	limfadenopatiya	borrowing
<b>Primary tumor site</b>	первичный очаг опухоли	asosiy o'sma o'chog'i	functional
<b>Suspicious lesion</b>	подозрительное образование	shubhali hosila	functional
<b>High-grade dysplasia</b>	выраженная дисплазия	yuqori darajali displaziya	calque
<b>Immunotherapy agent</b>	препарат для иммунотерапии	immunoterapiya preparati	calque
<b>Carcinoma in situ</b>	карцинома in situ	in situ karsinoma	borrowing + descriptive
<b>PD-L1 expression</b>	экспрессия PD-L1	PD-L1 ekspressiyasi	borrowing
<b>Tumor invasion</b>	инвазия опухоли	o'smaning invaziyasi	calque
<b>Solid mass</b>	солидное образование	solid hosila	borrowing + functional

The comparative analysis demonstrates that Russian oncology terminology is more standardized due to long-standing clinical usage and established medical literature. In contrast, Uzbek equivalents vary widely, lacking consistency across hospitals and diagnostic centers. The absence of a unified Uzbek medical terminology database contributes to variability in clinical documentation.

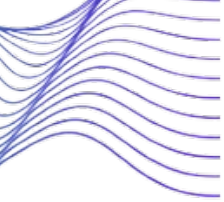
The findings underscore the necessity for terminological harmonization across all three languages. Establishing unified oncological glossaries and adopting clear translation guidelines will minimize ambiguity and enhance the accuracy of medical communication, especially in imaging, pathology, and treatment protocols.

### Conclusion

Oncology terminology translation poses significant linguistic and clinical challenges due to terminological density, conceptual gaps, and inconsistent use across languages. The analysis highlights partial equivalence, neologisms, and semantic ambiguity as major obstacles. To ensure safe and effective clinical communication, standardized glossaries and translation protocols must be implemented in multilingual medical settings.

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