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ONCOLOGY: INTERNATIONAL SCIENTIFIC CONFERENCE ON MEDICINE AND HEALTH SCIENCES OF THE UNIVERSITY OF LATVIA, 2026

On 26 March 2026, the University of Latvia hosted the International Scientific Conference on Medicine and Health Sciences.

This section brings together abstracts that collectively reflect the breadth and methodological diversity of contemporary cancer research. Spanning solid tumours and haematological malignancies, the contributions are organised into six interrelated thematic clusters: tumour biology and molecular markers, diagnostic and radiological assessment, prognostic stratification and survival, treatment patterns and clinical outcomes, haematological malignancies and response dynamics, and quality of care and patient-centred oncology systems.

A substantial proportion of the contributions address tumour biology and prognostic factors, highlighting the continued importance of histopathological and molecular markers in risk stratification. Studies on melanoma, colorectal cancer, gastric cancer, and renal cancer illustrate how parameters such as mitotic index, mutation status, microsatellite instability, pathological stage, and lymph node ratio refine prognostic assessment and support more individualised clinical decision-making.

Diagnostic assessment and treatment response constitute another key focus. Radiological–pathological correlations in head and neck tumours, imaging-based evaluation of response to induction chemotherapy in oral cavity squamous cell carcinoma, and post-radiosurgical volumetric response patterns in vestibular schwannoma demonstrate the expanding role of imaging in staging, therapeutic planning, and post-treatment interpretation.

Real-world treatment patterns and outcomes are explored across multiple malignancies, including testicular tumours, breast cancer, melanoma, and chronic myeloid leukaemia, providing valuable insights into everyday clinical practice beyond controlled trial settings. Haematological oncology is further represented through analyses of molecular response dynamics and immune escape mechanisms in chronic leukaemia, linking biological processes with clinically relevant outcomes.

Finally, the section includes patient-centred and system-level perspectives, addressing patient-reported outcomes and delays along oncology care pathways. Together, these abstracts highlight ongoing efforts to improve diagnostic precision, prognostic accuracy, therapeutic effectiveness, and the overall quality of cancer care.

Mārcis Leja

IMMUNOREGULATORY SUBPOPULATIONS OF INKT CELLS AND MYELOID-DERIVED SUPPRESSOR CELLS IN CHRONIC LYMPHOCYTIC LEUKAEMIA: IMPLICATIONS FOR DISEASE PROGRESSION AND IMMUNE EVASION

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Background. Chronic lymphocytic leukaemia (CLL) is characterised by progressive immune dysfunction driven by interactions between malignant B cells and regulatory immune populations. Invariant natural killer T (iNKT) cells include subsets with strong immunoregulatory properties that may promote tumour immune evasion.

Aim. This study aimed to assess the frequencies and clinical relevance of two suppressive iNKT subpopulations FoxP3$^-$ regulatory iNKT cells (iNKTreg) and IL-10-producing iNKT10 cells (E4BP4$^-$IL-10$^-$) in treatment-naïve CLL patients.

Methods. Peripheral blood samples from 60 untreated CLL patients and healthy controls were analysed using multi-colour flow cytometry. iNKTreg, iNKT10 cells and monocytic myeloid-derived suppressor cells (M-MDSCs) were quantified, including evaluation of IDO, ARG1, NOS2 and IL-10 expression. Associations with clinical stage, prognostic markers (ZAP-70, CD38, cytogenetic abnormalities), treatment requirements and time to first treatment (TTFT) were examined. ROC analysis was performed to identify cut-off values predicting ZAP-70 positivity.

Results. iNKTreg and iNKT10 cell frequencies were significantly increased in CLL compared with controls, with the highest levels in advanced clinical stages. iNKTreg cells were increased in ZAP-70-positive and CD38-positive patients, whereas iNKT10 cells were elevated in cases with del(11q) or del(17p). Patients requiring therapy during follow-up had higher baseline levels of both subsets. Elevated iNKTreg frequencies were associated with shorter TTFT. Both iNKT subsets positively correlated with circulating IDO-expressing M-MDSCs, while no associations were observed with ARG1, NOS2 or IL-10 expression.

Conclusions. iNKTreg and iNKT10 cells are expanded in CLL and associate with adverse prognostic markers and shorter TTFT. Their correlation with IDO-positive M-MDSCs suggests an interconnected immunosuppressive net- work contributing to disease progression and immune escape.

STRENGTHENING THE CANCER REGISTRY SYSTEM IN UZBEKISTAN: PROGRESS AND IMPLEMENTATION GAPS

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Background. A population-based cancer registry is essential for monitoring cancer incidence. In Uzbekistan, modernisation of the registry system has been implemented within a national oncology development project with support from the Islamic Development Bank, IARC, and WHO.

Aim. The aim of this study is to assess recent progress in the development of the cancer registry system in Uzbekistan.

Methods. A descriptive assessment was conducted using official reports and documents from the Ministry of Health, the National Cancer Registry, and major oncology centres. The study analysed the organisation of data collection and implementation of registry software. Cancer registration in Uzbekistan is coordinated by the Cancer Registry Department of the Republican Specialised Scientific and Practical Medical Centre of Oncology and Radiology, which functions as the National Cancer Registry. Data are collected from 15 regional branches and oncology outpatient units, with dedicated medical registrars, statisticians, and technical staff responsible for cancer registration at national and regional levels.

Results. In Uzbekistan, the cancer data collection system is passive, based on mandatory reporting of clinical and pathology data from the hospitals using several forms. Ministry of Health (MoH) established a Working Group comprising the main stakeholders, and an action plan for improving cancer registration was developed and tracked at regular working group meetings. The legislation document was created in Oct. 2025 by the national cancer registry team and the MoH, meanwhile it still needs to be implemented. The significant achievement is the deployment of specific software for cancer registration in 2025, both at the National

Cancer Registry and in the regions, by IT company assigned the task on behalf of the Ministry of Health. A unique personal identification system has enabled automatic linkages across different statistical databases, which were implemented in the cancer registration software in 2025 and are now operational across all regional branches of the Republican Specialised Scientific and Practical Medical Centre of Oncology and Radiology and Childhood Cancer Centre. Software is in the process of adding necessary functionality for data consolidation and reporting. Overall, data collection from the sources has significantly improved since the last visit, including the Childhood Cancer Centre and the Republican Specialised Scientific Practical Medical Centre of Haematology. Moreover, training in cancer registration commenced in 2024–2025 as part of the project, including Basic Cancer Registration and Childhood Cancer registration courses, which were conducted in September 2025 by the IARC/WHO and National Cancer Registry team. Finally, the first SOP on cancer registry was created at the beginning of 2026 with support of IARC/WHO.

Conclusion. Uzbekistan has made significant progress in developing a national cancer registry through legal initiatives, deployment of dedicated software, improved data linkage, and structured training programs. These steps indicate a transition toward a standardised and coordinated registration system, although full legislative implementation and completion of software functions are still required to ensure data quality and sustainability.

DETERMINANTS OF HIGH-RISK RENAL CANCER

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Background. Renal cell carcinoma is the most common malignant tumour of the kidney, accounting for approximately 2–3% of all cancers worldwide. More than 400,000 new cases are diagnosed annually, with around 180,000 deaths reported globally. In Latvia, renal cancer represents about 2–3% of all oncological cases, with over 300 newly diagnosed patients each year. Despite advances in surgical treatment, high-risk patients face recurrence rates of up to 40–50% within five years after radical or partial nephrectomy. Since 2024, state-funded adjuvant pembrolizumab therapy has been available in Latvia for high-risk patients, highlighting the importance of accurate risk stratification based on tumour stage and pathological risk factors.

Aim. The aim of this study was to identify high-risk renal cancer patients based on TNM classification and associated pathological features, determine the most frequent adverse risk factors, and analyse correlations between these factors to improve patient selection for adjuvant therapy and follow-up strategies in Latvia.

Methods. A retrospective, quantitative, non-experimental study was conducted using medical records of patients diagnosed with renal tumours. Clinical and pathological data, including TNM stage, tumour necrosis, lymphatic involvement, and vascular invasion, were analysed. Patients were categorised into lower-stage (T1–T2) and higher-stage (T3–T4) groups. Statistical analysis was performed using chi-square.

Results. A total of 94 patients were included in the study; 61.7% were male and 38.3% were female. The mean age was 65. A statistically significant association was observed between higher tumour stage and lymphatic involvement ($\chi^2(1, n = 71) = 6.106$, $p = 0.013$). Similarly, vascular invasion was significantly more frequent in patients with advanced tumour stages ($\chi^2(1, n = 71) = 6.776$, $p = 0.009$). Although tumour necrosis was more common in patients with T3–T4 tumours (46.9%) compared to T1–T2 tumours (36.8%), this association was not statistically significant ($p = 0.345$).

Conclusion. Higher tumour stage in renal cell carcinoma is significantly associated with lymphatic involvement and vascular invasion, confirming their importance as adverse prognostic factors. Tumour necrosis did not demonstrate a significant correlation with tumour stage in this cohort. Integrating TNM classification with pathological risk factors may enhance identification of high-risk patients, optimise selection for adjuvant pembrolizumab therapy, and improve follow-up strategies in Latvia.

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TIME TO DEFINITIVE TREATMENT FOR CUTANEOUS MELANOMA AT THE LATVIAN ONCOLOGY CENTRE IN 2025: A RETROSPECTIVE DELAY ANALYSIS

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Background. Delays along the melanoma care pathway may influence disease severity at treatment initiation and reflect system-level bottlenecks. Data on melanoma diagnostic and treatment timelines in Latvia are limited.

Aim. To quantify key time intervals to definitive treatment for cutaneous melanoma at the Latvian Oncology Centre (LOC) in 2025 and assess associations with disease severity.

Methods. Retrospective single-centre cohort study of melanoma episodes managed at LOC in 2025. Extracted variables included age, sex, melanoma category (invasive or *in situ*), pathological TNM–based AJCC 8th edition stage, Breslow thickness, biopsy date, pathology report date, and definitive treatment start date. Time intervals (days) were calculated for biopsy→pathology, pathology→definitive treatment, and first medical contact within the LOC system (FMC; electronic referral date if available, otherwise first LOC visit)→definitive treatment. Non-parametric summaries were used; association between FMC→definitive treatment and Breslow thickness was tested using Spearman's rho.

Results. The dataset included 201 melanoma episodes in 196 patients; 62.7% were female. Median age was 64 years (IQR 54–76). Invasive melanoma comprised 97.0%. Stage distribution was predominantly early (IA 31.3%, IB 27.4%), with stage III 8.0% and stage IV 2.0%. Median Breslow thickness was 1.2 mm (IQR 0.6–2.7). Median biopsy→pathology time was 11 days (IQR 8–14), pathology→definitive treatment 32 days (IQR 22– 46), and FMC→definitive treatment 41 days (IQR 22–63). FMC→definitive treatment was positively associated with Breslow thickness (rho = 0.27, $p < 0.001$) and differed across stages, with longer delays in stage III–IV versus earlier stages ($p < 0.001$). Time intervals also differed according to biopsy location, reflecting differences in patient care pathways rather than system-related delays.

Conclusions. In 2025, melanoma care at LOC was dominated by early-stage disease; however, longer system-level delay from first contact at LOC to definitive treatment was associated with thicker tumours and more advanced stage. Optimising processes after histopathological diagnosis may help reduce time to treatment.

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FACTORS ASSOCIATED WITH MELANOMA STAGE AT DIAGNOSIS: A RETROSPECTIVE STUDY

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Background. Cutaneous melanoma is an important public health problem because its incidence is increasing and it has high mortality when diagnosed at advanced stages. Although early detection is essential, melanoma is often diagnosed late, even when located in visible body areas. Therefore, it is important to analyse factors related to melanoma stage at diagnosis.

Aim. The aim of this study was to analyse the relationship between melanoma stage, tumour visibility, ulceration, and patient demographic characteristics.

Methods. This retrospective study included 107 patients diagnosed with cutaneous melanoma. Data on age, sex, place of residence, tumour stage, size, ulceration, and localisation were analysed. Melanoma staging was performed according to the AJCC 8th edition classification system. Stage IIIa was defined as the presence of micrometastases in regional lymph nodes.

Tumour localisation was classified as visible or non-visible depending on whether the lesion was easily observed by the patient. Visible areas included the face, neck, upper limbs, and anterior trunk, while non-visible areas included the back, posterior trunk, scalp, and gluteal region.

Non-parametric statistical methods were used, including the Mann–Whitney U test, chi-square test, and Kruskal–Wallis test. Statistical significance was defined as $p < 0.05$.

Results. A substantial proportion of patients were diagnosed with advanced melanoma (stage IIIa or higher). Among patients with melanomas in visible areas, 40.6% (26/64) had stage IIIa or higher disease. No significant differences were found between patients younger and older than 60 years regarding melanoma stage, tumour visibility, or ulceration ($p > 0.05$).

Women more frequently had melanomas in visible areas (63.5%), while men more often had melanomas in non-visible areas. Ulceration and larger tumour size were strongly associated with higher melanoma stage. Men had a higher proportion of stage III melanomas (44.4% at stage IIIb–IIIc), whereas women showed a more even distribution with a higher proportion of stage II disease (44.1% at stage IIa–IIc).

Conclusion. Melanoma is often diagnosed at advanced stages even when located in visible body areas, indicating that visibility alone does not ensure early detection. Tumour-related factors appear to be more important than demographic factors in delayed diagnosis. Men also tend to be diagnosed at later stages than women. These findings highlight the need for improved public awareness and targeted prevention strategies.

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PATTERNS OF LOCAL BREAST CANCER RECURRENCE: A RETROSPECTIVE STUDY AT THE LATVIAN ONCOLOGY CENTRE, RĪGA EAST CLINICAL UNIVERSITY HOSPITAL (2020–2025)

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Background. Local recurrence remains an important outcome in breast cancer management. Understanding clinicopathological features and treatment patterns in patients who develop local recurrence may help identify clinically relevant trends. This study presents a retrospective analysis of patients treated at the Latvian Oncology Centre, Rīga East Clinical University Hospital.

Aim. To describe a clinicopathological characteristics and treatment patterns of breast cancer patients who developed local recurrence between 2020 and 2025.

Methods. This retrospective study included patients diagnosed with primary breast cancer who subsequently developed local breast cancer recurrence between 2020 and 2025 at the Latvian Oncology Centre. Clinical, pathological, and treatment-related variables were analysed. Statistical analysis was performed using IBM SPSS Statistics version 31.

Results. A total of 124 patients were analysed. The mean age at diagnosis was 59.5 years. The majority of patients initially presented with early-stage disease, most commonly stage IA (40.3%) and stage IIA (29.0%), followed by stage IIB (14.5%). Unifocal tumours were diagnosed in 108 cases (87.1%), while multifocal tumours were identified in 16 cases (12.9%). Tumour focality was not associated with disease stage ($p = 0.922$).

Breast-conserving surgery was performed in 99 patients (79.8%), while mastectomy was performed in 25 patients (20.2%). Breast-conserving surgery predominated in early-stage disease, whereas the proportion of mastectomies increased with advancing stage. A statistically significant association was observed between tumour stage and type of surgery ($\chi^2 = 18.108$, $p = 0.020$), although interpretation is limited by small expected cell count.

Negative resection margins (R0) were achieved in 97.6% of primary surgeries. All patients developed local recurrence during follow-up, indicating that recurrence occurred despite adequate surgical margins.

Adjuvant treatment data were available for 121 patients. Combined adjuvant systemic therapy and radio-therapy was the most common treatment modality (61.2%), followed by systemic therapy alone (30.6%) and radiotherapy alone (5.0%). No statistically significant association was observed between tumour stage and type of adjuvant therapy ($p = 0.108$).

The most common molecular subtypes were luminal B/HER2– (36.4%), luminal A/HER2– (21.2%), and luminal B/HER2+ (19.5%); triple-negative breast cancer accounted for 10.2% of cases. Time to recurrence did not differ significantly by age group, tumour stage, or molecular subtype, although luminal tumours tended to recur later than triple-negative and HR–/HER2+ tumours.

Conclusions. Local recurrence occurred predominantly after early-stage breast cancer and despite negative surgical margins. Tumour focality was not associated with stage, while surgery type was stage-dependent. Luminal subtypes showed a tendency toward longer time to recurrence.

ASSOCIATION BETWEEN RADIOLOGICAL RESPONSE TO INDUCTION CHEMOTHERAPY AND LONG-TERM OUTCOMES IN LOCALLY ADVANCED ORAL CAVITY SQUAMOUS CELL CARCINOMA

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Background. Oral cavity squamous cell carcinoma (OCSCC) is a frequently encountered head and neck malignancy, with locally advanced disease requiring aggressive multimodal therapy associated with substantial functional morbidity.

Aim. This study aimed to determine whether radiological response to induction chemotherapy (ICT) predicts surgical respectability, progression free survival (PFS), and overall survival (OS) in patients with locally advanced OCSCC, thereby identifying prognostic factors to guide treatment strategies and patient selection for surgical intervention.

Methods. This retrospective cohort analysis examined 17 patients diagnosed with OCSCC who received treatment at Pauls Stradiņš Clinical University Hospital during the period from 2020 to 2022. The data were extracted from medical archives, encompassing tumour anatomical location, disease staging according to TNM classification, chemotherapy regimen characteristics and course number, surgical intervention status, timing and occurrence of locoregional recurrence, and metastatic disease development. Statistical analysis was conducted using IBM SPSS.

Results. The mean age of patients was 57 years (range 35–75), predominantly presenting with stage IV disease (64.8%). Patients received a mean of 3 (range 1–6) ICT courses. Significant association was observed between ICT response and surgical eligibility, with 75% of responders proceeding to surgery compared to 22.2% of non-responders ($p = 0.044$). Responders demonstrated significantly superior PFS with a median of 18.8 months compared to 2.6 months in non-responders ($p = 0.002$) and OS with median of 18.8 months versus 8.2 months ($p = 0.002$). ICT course number did not differ between response groups or surgical eligibility groups, indicating treatment intensity did not influence outcomes.

Conclusion. Radiological response to ICT emerged as a key determinant of surgery and survival in locally advanced OCSCC, while the number of ICT courses showed no impact on treatment outcomes.

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THERAPY FOR PATIENTS WITH TESTICULAR TUMOURS AT PAULS STRADIŅŠ CLINICAL UNIVERSITY HOSPITAL, PERIOD FROM 2021–2025

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Background. Testicular cancer is the most common malignancy in males between ages of 15 and 35, generally with favourable prognosis when detected early. Standard treatment typically involves orchiectomy followed by surveillance, chemotherapy, radiotherapy. However frequently also prophylactic chemotherapy is used.

Aim. The aim of this study is to analyse which therapeutic methods were used in the treatment of testicular cancer patients at Pauls Stradiņš Clinical University Hospital during the period from 2021 to 2025 and compare with the literature data.

Methods. Data of patients who were diagnosed with testicular cancer at Pauls Stradiņš University Hospital will be analysed, processed and anonymised. Collected data will be compared with the literature data.

Results. In the time frame from 2021–2025 at Pauls Stradiņš Clinical University Hospital there was a total of 54 testicular cancer patients who were undergoing treatment.

From all testicular cancer patients, 61% were seminomas and 39% were non-seminomas. All patients received orchiectomy, 37% received adjuvant chemotherapy, 15% received prophylactic chemotherapy, 6% received lymphadenectomy and only 2% received radiation therapy.

Conclusion. Most often (in 63% of cases) patients with testicular cancer are treated only by orchiectomy followed by long-term observation. However, less than half of the patients also receive adjuvant or prophylactic chemotherapy. Radiation therapy currently is used very rarely and only for germ cell seminomas. Overall, the therapeutic approaches used at Pauls Stradiņš Clinical University hospital during the analysed period correspond closely with current treatment strategies described in the literature.

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RADIOBIOLOGICAL AND VOLUMETRIC RESPONSE OF VESTIBULAR SCHWANNOMA AFTER CYBERKNIFE RADIOSURGERY: KOOS STAGE AND CLINICAL OUTCOMES

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Background. Vestibular schwannomas (VS) are benign tumours increasingly treated with CyberKnife stereo-tactic radiosurgery/stereotactic radiotherapy (SRS/SBRT) to achieve tumour control while preserving neurological function. Post-treatment MRI interpretation is complicated by transient tumour enlargement (pseudoprogression), which may mimic recurrence. These volumetric changes likely reflect radiation-induced biological effects rather than tumour growth, however, their relationship to anatomical tumour stage, particularly Koos classification, remains insufficiently defined.

Aim. The aim of this study was to characterise post-radiosurgical radiobiological and volumetric response patterns of VS following CyberKnife SRS/SBRT and to evaluate their association with Koos tumour stage and clinical outcomes on follow-up MRI.

Methods. A retrospective volumetric analysis included 85 patients with VS treated with the CyberKnife SRS/SBRT system between 2015 and 2024. Median baseline tumour volume was 1.11 cm³ (range 0.05-12.05; IQR 0.41–2.18). Tumours were classified according to Koos stage prior to treatment: 17 Koos I (20%), 33 Koos II (39%), 24 Koos III (28%), and 11 Koos IV (13%). Treatment was delivered in a single fraction in 55 patients (64.7%), in three fractions in 24 (28.2%), and in five fractions in 6 (7.1%), with prescribed doses of 12–14 Gy, 18–21 Gy, and 22.5–27.5 Gy, respectively. Follow-up ranged from 6.1 to 106.9 months (median 44.6 months; IQR 18.2–64.3), with 58.8% exceeding 36 months. Contrast-enhanced MRI scans were contoured using Precision™ (Accuray, Sunnyvale, CA, USA) and statistical analysis was performed using Microsoft Excel.

Results. At last follow-up, tumour volume reduction or stabilization was observed in 57 of 85 cases (67.1%). Transient tumour enlargement consistent with pseudoprogression occurred in 22 lesions (25.9%), typically within the first 1–2 years after radiosurgery and followed by spontaneous regression. The median absolute volume increase during pseudoprogression was 0.42 cm³ (IQR 0.18–0.72), corresponding to a median relative increase of 24.8% (IQR 10.9–41.1). Overall, 23% of tumours showed more than 20% relative volume increase. Median tumour volume decreased from 1.1 cm³ to 0.7 cm³ at last follow-up. Volumetric response was independent of Koos stage. Among 76 patients, with measurable pre-treatment hearing, 72 (94.7%) retained functional hearing, with no grade III-IV toxicity observed.

Conclusions. CyberKnife SRS/SBRT provides durable tumour control with excellent hearing preservation and minimal toxicity across all Koos stages. Transient post-treatment volumetric enlargement represents a Koos-independent radiobiological response rather than tumour progression and should be recognised to ensure accurate MRI interpretation and avoid unnecessary clinical interventions.

Acknowledgements. The authors declare no conflicts of interest and no external funding.

CLINICOPATHOLOGICAL DETERMINANTS OF MICROSATELLITE INSTABILITY IN COLORECTAL CANCER: A REGISTRY-BASED ANALYSIS OF 732 PATIENTS

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Background. Microsatellite instability-high (MSI-H) colorectal cancer (CRC) defines a biologically distinct subtype with significant implications for prognosis, Lynch syndrome screening, and eligibility for immunotherapy. However, the interplay between demographic factors and MSI status in unselected patient cohorts remains to be fully understood.

Aim. To evaluate the prevalence of MSI-H across different tumour locations and to identify independent clinical determinants of MSI-H status in patients with CRC.

Methods. A registry-based analysis of 732 patients with colorectal and anal cancer (ICD-10 C18–C21) was performed. MSI status was determined using the Idylla MSI assay. Statistical associations were assessed using $\chi 2$ tests and multivariable logistic regression for the colon cancer subgroup (C18).

Results. The overall MSI-H prevalence was 12.7% (n = 93/732). MSI-H was predominantly found in colon cancer (18.3%), compared to rectal cancer (2.3%), and was absent in rectosigmoid and anal cancers. In colon cancer, MSI-H prevalence was significantly higher in females than males (24.9% vs 10.9%, $p < 0.001$) and peaked in patients aged ≥ 80 years (32.3%). Multivariable regression confirmed that female sex (OR 2.58; 95% CI 1.56– 4.28) and increasing age (OR 1.03 per year; 95% CI 1.00–1.05) were independent predictors of MSI-H status.

Conclusions. MSI-H is strongly associated with proximal tumour location, female sex, and advanced age. These findings underscore the necessity of routine MSI testing in colon cancer, particularly in elderly and female populations, to optimise clinical management and hereditary risk assessment.

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PATTERNS OF MOLECULAR RESPONSE IN CHRONIC MYELOID LEUKAEMIA

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Background. Chronic myeloid leukaemia (CML) is a clonal myeloproliferative neoplasm driven by the BCR-ABL1 fusion gene, resulting in constitutive tyrosine kinase activity. The introduction of tyrosine kinase inhibitors has transformed CML into a largely manageable chronic disease, with long-term outcomes closely linked to the depth and timing of molecular response. Quantitative monitoring of BCR-ABL1 transcript levels on the international scale is essential to response assessment, risk stratification, and therapeutic decision-making in routine clinical practice.

Aim. To describe the demographic characteristics, molecular response dynamics, and treatment patterns of patients with CML receiving first-line and subsequent TKI therapy, and to evaluate factors associated with achievement of major molecular response (MMR).

Methods. A retrospective single-centre analysis was performed in 25 patients with chronic myeloid leukaemia treated with tyrosine kinase inhibitors at Pauls Stradiņš Clinical University Hospital, using data from 2008 to 2025. Data were summarised using mean ± SD or median with interquartile range (IQR), as appropriate. Group comparisons were performed using Fisher's exact test or the Wilcoxon rank-sum test. Molecular response was assessed using standardised BCR-ABL1 transcript levels (% IS) at predefined time points.

Results. The cohort included 16 females (64%) and 9 males (36%), without significant sex imbalance ($p = 0.22$). Mean age at diagnosis was 53 ± 16 years (range 18.1–76.3), and median follow-up was 4.9 years (IQR 3.5–10.4). Median BCR-ABL1 at diagnosis was 40.4% IS (IQR 17.8–55.0%). Progressive transcript reduction was observed, with median levels of 10.0% at 3 months, 0.7% at 6 months, 0.073% at 12 months, 0.016% at 18 months, and 0.0052% at 24 months, accompanied by marked inter-individual variability.

All patients initiated first-line imatinib. Second-line therapy was required in 9 patients (36%), most commonly dasatinib, with a median time to switch of 15.8 months. At 12 months, major molecular response was achieved in 15 patients (60%), while MR4 occurred in 2 patients (8%). Requirement for second-line therapy was strongly associated with failure to achieve MMR ($p = 0.0003$). Patients failing MMR were significantly older at diagnosis ($p = 0.036$).

Conclusions. Expected molecular response kinetics were observed under first-line imatinib, although inter-individual variability was substantial. Treatment escalation was common, and older age was associated with failure to achieve major molecular response at 12 months. Molecular response rates in our cohort were com-parable to those reported in international studies of first-line imatinib.

Acknowledgements. There are no conflicts of interest to disclose.

RADIOLOGICAL AND PATHOLOGICAL CORRELATION OF EXTRANODAL EXTENSION (ENE) IN HEAD AND NECK TUMOURS FROM 2021 TO 2024

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Background. ENE in head and neck tumours is a well-established adverse prognostic factor associated with increased risk of cancer recurrence and reduced survival. Histopathology remains the gold standard for ENE detection, however, clinical solutions are often based on preoperative imaging. Computer tomography (CT) is widely used for staging and surgical treatment planning, although its diagnostic accuracy for ENE detection remains variable. Therefore, evaluating the correlation between CT features and histopathological findings of ENE is essential to assess the reliability of imaging-based staging and optimise prognostic stratification and treatment planning.

Aim. To evaluate the accuracy of preoperative CT in detecting ENE by comparison with postoperative histopathological findings.

Methods. A retrospective analysis was performed on patient data collected between 2021 and 2024. Adult patients (?18 years) with primary malignant head and neck tumours treated at the Head and Neck Surgery Department of the Latvian Oncology Centre were included. Eligible patients underwent preoperative CT imaging and postoperative histopathological examination as part of their diagnostic and therapeutic management. Surgical treatment involved cervical lymph nodes radical dissection or cervical lymph nodes excision, ensuring the availability of adequate specimens for comprehensive histopathological evaluation. Only cases with complete radiological, operative and histopathological data were included in the analysis.

Results. A total of 242 patients were included in the study. Preoperative CT suggested ENE in 22 patients. Surgical treatment with subsequent histopathological examination identified cervical lymph node metastases in 122 patients, with ENE confirmation in 58 cases. Based on the available CT data, the mean interval between preoperative CT imaging and histopathological evaluations was 45 days. Comparison of preoperative CT findings with histopathological results demonstrated a statistically significant association (Fisher's exact test, $p = 0.010$). CT showed low sensitivity for ENE detection (27.6%; 95% CI 17.8–40.2), but high specificity (90.6%; 95% CI 81.0–95.6). Positive CT findings were more frequently confirmed as ENE on histopathological examination.

Conclusions. The present study shows that preoperative CT findings suggestive of ENE are significantly associated with histopathological confirmation. However, due to the low sensitivity of CT, a significant proportion of ENE cases are

missed on preoperative assessment. While positive CT findings may be considered clinically meaningful, the absence of radiological signs does not exclude ENE. These findings underscore the limitations of CT in ENE detection and highlight the continued importance of histopathological evaluation for accurate prognostic assessment in head and neck cancer patients.

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HISTOPATHOLOGICAL CHARACTERISTICS AND BRAF MUTATION STATUS IN CUTANEOUS MELANOMA: A RETROSPECTIVE STUDY

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Background. Cutaneous melanoma is a biologically heterogeneous malignancy in which histopathological features play a crucial role in prognostic assessment and therapeutic decision-making. Tumour thickness, mitotic activity, and ulceration are established prognostic factors, while the presence of *BRAF* mutations has significant implications for targeted therapy, particularly in advanced disease.

Aim. The aim of this study was to evaluate the association between melanoma stage and key histopathological parameters, as well as to assess their relationship with *BRAF* mutation status.

Methods. A retrospective study included 99 patients who underwent treatment for cutaneous melanoma stages IA–IV. Patients were treated at Rīga East Clinical University Hospital (RAKUS), and histopathological evaluation was performed at the RAKUS Pathology Centre. Complete histopathological data were available for all patients. *BRAF* mutation testing was performed in 40 patients. The *BRAF* V600E mutation (NM_004333.4(BRAF):c.1799T>A, p.Val600Glu) was assessed using PCR-based testing. Recorded variables included clinical stage (IA–IV), Breslow thickness, mitotic rate (mitoses/mm²), and ulceration status. Spearman's rank correlation was used to assess associations between ordinal and continuous variables, while group comparisons were performed using non-parametric tests. A p-value < 0.05 was considered statistically significant.

Results. An increasing melanoma clinical stage was significantly associated with greater Breslow thickness (Spearman's $\rho = 0.556$, $p < 0.001$) and higher mitotic activity (Spearman's $\rho = 0.339$, $p < 0.001$). Ulceration status was not significantly associated with melanoma stage ($p > 0.05$). Among patients with available *BRAF* mutation status, differences in histopathological parameters were observed between *BRAF*-mutant and wild-type melanomas; however, ulceration was not significantly associated with *BRAF* V600E positivity. Breslow thickness and mitotic activity tended to be higher in patients with more advanced clinical stages irrespective of *BRAF* mutation status.

Conclusions. Melanoma clinical stage is significantly associated with Breslow thickness and mitotic activity, confirming their importance as markers of tumour progression. Ulceration did not demonstrate a significant association with stage in this cohort. These findings highlight the value of histopathological parameters in melanoma stratification and provide important context for interpreting *BRAF* mutation status in routine clinical practice.

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FEASIBILITY OF IMPLEMENTING PATIENT-REPORTED OUTCOME MEASURES (PROM) IN BREAST CANCER CARE: A QUALITATIVE STUDY

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Background. Patient-reported outcome measures (PROM) are increasingly recommended as tools for monitoring patient well-being and improving quality of care in oncology. We piloted ICHOM Breast cancer set to evaluate PROM collection in a Breast unit at PSCUH. Before large-scale implementation, it is essential to understand feasibility from the perspectives of stakeholders in a specific health care setting.

Aim. To explore the feasibility of implementing PROM in breast cancer care in Latvia by identifying barriers, facilitators, and requirements for integration into routine practice.

Methods. A pre-implementation feasibility study was conducted following Bowen's feasibility framework. Semi-structured interviews were performed with breast cancer patients and experts involved in clinical care and healthcare policy in an ongoing project. Here we report preliminary themes from 10 patient and 11 policy expert interviews. Braun and Clarke's reflexive thematic analysis was used to identify patterned meanings across participant groups.

Results. PROM were viewed as a promising concept with substantial potential for quality monitoring and service improvement at the system level, yet its clinical value remained unclear to healthcare professionals. A central barrier was the absence of a feedback loop between collected PROM data and clinical decision-making. Patients expressed that they would welcome PROM being integrated into the treatment process, as the questionnaires made them feel that their experiences and concerns were acknowledged as part of their care. Participants also offered suggestions to improve user experience and ensure that the questionnaires more accurately capture the lived experiences of breast cancer patients. Active use of PROM seemed to rely primarily on guidance and involvement from a designated coordinator rather than on the digital tool alone. Additionally, a clear tension was observed between the perceived value of PROM for system-level quality monitoring and their relevance for individual patient management at the point of care.

Conclusions. Early insights suggest that although PROM are well accepted by patients and regarded as valuable from a public health and quality improvement standpoint, their routine use is not yet fully practicable. Successful integration will require organisational adjustments, clear pathways for interpreting and acting on PROM data, and alignment between system-level goals and everyday clinical workflows.

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RATIO AND PATHOLOGICAL STAGE AS PROGNOSTIC FACTORS FOR OVERALL SURVIVAL IN NODE-POSITIVE GASTRIC CANCER

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Background. Node-positive gastric cancer shows substantial prognostic heterogeneity. Lymph node ratio (N-ratio) may complement pathological staging in survival prediction.

Aim. To evaluate pathological stage (pT, pN) and N-ratio as prognostic factors for overall survival (OS) in node-positive gastric cancer.

Methods. A retrospective cohort of surgically treated node-positive gastric cancer patients (n = 267; pathological stage IB-IIIC) was analysed. Patient data were collected for the period 2019–2024. OS was estimated by the Kaplan–Meier method and compared using log-rank tests (pairwise comparisons for pT). Univariate Cox proportional hazards regression was performed to calculate hazard ratios (HR) with 95% confidence intervals (CI). N-ratio was categorised as 0–24% versus 25–100%.

Results. OS differed significantly by pT stage (log-rank pairwise: pT1–2 $p = 0.024$; pT1–3 $p < 0.001$; pT1–4 $p < 0.001$; pT2–3 $p = 0.010$; pT2–4 $p < 0.001$; pT3–4 $p < 0.001$); no OS events occurred in pT1 (0/15).

OS worsened with increasing pN stage (median OS: pN1 74.0, pN2 38.0, pN3 18.0). In Cox regression (reference pN1), pN2 was associated with higher mortality risk (HR 1.522; 95% CI 1.004–2.308; $p = 0.048$), and pN3 showed a markedly increased risk (HR 2.487; 95% CI 1.692–3.654; $p < 0.001$).

High N-ratio (25–100%) was associated with inferior OS compared with 0–24% (median 21.0 vs 40.0; log-rank $p = 0.006$) and remained prognostic in Cox regression (HR 1.635; 95% CI 1.145–2.335; $p = 0.007$).

Conclusions. In node-positive gastric cancer, pT and especially pN stage, as well as N-ratio, are strong prognostic indicators for OS. High N-ratio identifies patients with substantially poorer survival and may complement pathological staging for risk stratification.

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PHENOTYPE OVER GENOTYPE: INDEPENDENT PROGNOSTIC VALUE OF MITOTIC INDEX IN MELANOMA

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Background. Histopathological and molecular features are widely used for risk stratification in melanoma patients, yet their relative prognostic significance remains incompletely defined.

Aim. This study aimed to evaluate the association between melanoma driver mutations and histopathological phenotypes, and to assess their independent prognostic value with respect to patient survival.

Methods. A retrospective cohort of melanoma patients with known BARF and NRAS mutation status was analysed for mitotic index, lymphocytic infiltration, and giant cell count. Associations between categorical and ordinal variables were assessed using chi-square and trend analysis. Overall survival was evaluated by Kaplan–Meier analysis and compared by log-rank testing. Independent prognostic factors were identified using multivariable Cox proportional hazards regression.

Results. Within the observed cohort, a significant phenotype-phenotype association was found between the mitotic index and the giant cell count ($p = 0.004$). Kaplan–Meier analysis demonstrated significantly worse survival in individuals with a greater mitotic index ($p < 0.001$). In multivariable Cox regression, neither BRAF nor NRAS mutation status was independently associated with survival ($p = 0.718$ and $p = 0.897$, respectively) when adjusted for mitotic index, demonstrating mitotic index as an independent prognostic factor ($p = 0.002$).

Conclusions. Mitotic index is an independent prognostic factor in melanoma patients, while BRAF and NRAS mutation status may influence survival indirectly through its association with tumour proliferation.

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