ERP29, a expressão de JUN foi maior em FaDu em comparação com as outras linhagens celulares (FC: 4,5, p= 0,03 e FC: 3,0, p= 0,03). A expressão de MDM2 foi menor em FaDu do que nas demais linhagens celulares (FC: 0,3, p= 0,002 e FC: 0,2, p = 0,01). No entanto, nas células com ERP29 silenciado, a expressão de MDM2 foi maior em FaDu do que em FaDu-CDDP (FC: 2,0, p = 0,02). **Conclusão:** Nossos resultados sugerem que o gene ERP29 modula a expressão de genes-chave da via PI3K/AKT, influenciando potencialmente o comportamento das células tumorais no carcinoma de faringe. Estudos adicionais, incluindo experimentos com diferentes linhagens celulares e modelos in vivo, são necessários para confirmar esses achados.

Palavras-chave: Câncer de cabeça e pescoço, ERP29, PI3K/AKT.

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PDCD1 VARIANTS ARE INDEPENDENT PROGNOSTIC FACTORS IN PATIENTS WITH HEAD AND NECK SQUAMOUS CELL CARCINOMA

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A B S T R A C T

Introduction/Justification: Laryngeal squamous cell carcinoma (LSCC) is a common malignancy in the upper aerodigestive tract, strongly associated with smoking and alcohol consumption. It is already well known that tumors development and progression depend on immune evasion. PD-1/PD-L1 pathway is a primary mechanisms of immune evasion. The PDCD1 gene encodes PD-1 and is a polymorphic gene. **Objectives:** His study aims to evaluate the influences of the PD1.1 (c. -606G>A), PD1 (c.627+252C>T), PD1.5 (c.804C>T) and PD1.9 (c.644C>T) single variants (SNVs) in PDCD1 gene influence the risk, clinicopathological aspects and survival of LSCC patients. **Materials and Methods:** This is a retrospective observational study including 284 patients with LSCC and 296 healthy controls (blood donors) seen at the General Hospital of University of Campinas. Clinical and pathological data were collected from the medical records by the main researcher. Genotypes of PDCD1 variants were identified using real-time PCR with TaqMan® probes. Statistical analyses included chi-square tests and logistic regression for LSCC risk assessment. Bonferroni analysis was used in comparison of multiple variables. Kaplan-Meier curves, log-rank test and univariate and multiple Cox regression were used to evaluate the impact of clinicopathological aspects and genotypes of SNVs on overall survival (OS) and event-free survival (EFS). **Results:** Similar frequencies of isolated and combined SNV genotypes were seen patients and controls. The frequencies of combined genotypes of SNVs, GA or AA + CT or TT of PD1.1 + PD1.5 and CT or TT + CT or TT of PD1.5 and PD1.9, were more common in patients with glottic tumor than in patients with tumors in other locations. The CC genotype of PD1 SNV and the CC + CC combined genotype of PD1.5+PD1 SNVs were more common in patients with tumors at stage III or IV than in patients with tumors at stage I or II. In multivariate Cox analysis, patients with BMI≤ 24.9 kg/m^2, ECOG ≥ 1, tumors at stage III/IV, and not submitted to surgical tumor resection had 1.81 (95%CI: 1,25-2,62%), 1.60 (95%CI: 1,14-2,24), 1.93 (1,24-3,00), and 1.80 (1,20-2,71) more chances of evolving to death than the remaining patients. In addition, patients with TT genotype of PD1.5 SNV and TT + CC combined genotype of PD1.5 and PD1 SNVs had a 1.59 (95% CI: 1.06-2.41) and a 2.97 (95% CI:1.43-6.18) more chances of evolving to death than others. **Conclusion:** Our data indicates: 1) The analyzed SNVs in the PDCD1 gene do not influence LSCC risk, 2) PD1, PD1.5, and PD1.9 affect LSCC location, 3) PD1 and PD1.5 influence LSCC aggressiveness, 4) BMI, ECOG, tumor stage, lack of surgical tumor resection, PD1 and PD1.5 SNVs are independent prognostic factors for OS of LSCC patients. These findings reinforce the importance of studying inherited biomarkers in oncology, which may contribute to risk stratification and personalized therapeutic approaches. **Acknowledgements:** The study was supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Apoio ao Ensino e à Pesquisa do Estado de São Paulo (FAPESP #2019/09168-8; #2023/09738-4, and Cancer Theranostics Innovation Center, CancerThera, CEPID FAPESP #2021/10265-8).

Keywords: Genetic polymorphisms, Laryngeal squamous cell carcinoma, PDCD1, Prognosis, Survival.

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PLATINUM-BASED CHEMORADIOTHERAPY AS DEFINITIVE TREATMENT IN ADVANCED SQUAMOUS CELL CARCINOMA OF HEAD AND NECK IN REAL-WORLD SETTING

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A B S T R A C T

Introduction/Justification: Head and neck squamous cell carcinoma (HNSCC) is one of the most prevalent malignant tumor globally, and over 60% of patients present

locoregionally advanced tumors. Platinum-based chemoradiotherapy is a widely adopted treatment for patients with unresectable locoregionally advanced HNSCC, those ineligible for surgery and those refusing surgery due to potential sequelae. While this approach has yielded favorable results in developed countries, its effectiveness in real-world settings in developing countries remains underexplored. Investigating treatment outcomes in this context is essential for optimizing oncologic care. **Objectives:** To assess the toxicity profile, tumor response, event-free survival (EFS), and overall survival (OS) in patients with locoregionally advanced HNSCC treated with definitive platinum-based chemoradiotherapy. **Materials and Methods:** This retrospective study included 233 patients treated at the Oncology Service of the General Hospital of University of Campinas (UNICAMP). Inclusion criteria encompassed patients aged 18 or older, with an Eastern Cooperative Oncology Group (ECOG) of 2 or lower, who underwent radiotherapy (RT) combined with either weekly or every-three-weeks administration of cisplatin (CDDP) or carboplatin (Carbo) as definitive treatment. Grade 3 or 4 adverse events were documented according to the National Cancer Institute, Common Terminology Criteria for Adverse Events (NCI CTCAE v5.0) standards. Response Evaluation Criteria in Solid Tumors (RECIST) criteria. Survival outcomes were estimated with the Kaplan-Meier method, and statistical comparisons were performed using the log-rank test and Cox proportional hazards regression for univariate and multivariate analyses. **Results:** The median age of patients enrolled in study was 60 years. Most enrolled subjects were males, active or former smokers and drinkers, had good performance status and comorbidities, and presented moderately differentiated and advanced tumors. Tumors were equally distributed in oral cavity, pharynx and larynx. Half of the patients developed grade 3 or 4 toxicities, with nausea/vomiting and nephrotoxicity being more frequently observed in the RT + CDDP group, while anemia and neutropenia were predominant in the RT + Carbo group. A total of 75% of patients achieved either complete or partial tumor response, with no significant impact from the treatment regimen. The two-year EFS and OS rates were 43.3% and 66.0%, respectively. Poor prognosis was associated with active smoking, ECOG performance status ≥ 2, stage IV disease, and treatment with RT + Carbo. Patients with these characteristics had an approximately twofold higher risk of presenting relapse and disease progression leading to death. **Conclusion:** This study highlights RT and CDDP as the most effective definitive treatment for patients with locoregionally advanced HNSCC from a Brazilian public hospital. Nevertheless, further prospective and randomized phase III study conducted with those patients is essential to define the optimal treatment strategy for these patients Acknowledgements: The study was supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).

Keywords: Definitive therapy, Head and neck squamous cell carcinoma, Outcome.

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BIODISTRIBUTION OF A TECHNETIUM-99M RADIOLABELED PEPTIDE DERIVED FROM LAMININ-111 IN A BREAST CANCER MODEL

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A B S T R A C T

Introduction/Justification: Breast cancer is a significant public health concern, ranking as the second most common tumor type among women. According to the World Health Organization (WHO), more than 14 million people develop breast cancer annually, with this number projected to rise to over 21 million by 2030. Studies have shown that biologically active peptides derived from laminin-111 can regulate gene expression in breast cancer-derived cells, among which the YIGSR peptide is of particular interest. Peptides designed to inhibit intracellular signaling pathways fall within the realm of molecular targeted therapies, which commonly focus on receptors overexpressed in tumors. **Objectives:** This study aimed to evaluate the biological behavior of the HYIGSR peptide, a laminin-111 derivative, radiolabeled with technetium-99m ([99mTc]Tc(CO)3), in a biodistribution assay using both control and breast cancer model mice. **Materials and Methods:** The HYIGSR peptide was radiolabeled using the tricarbonyl method, which enabled labeling at the histidine residue with the organometallic aqua-ion [99mTc(H2O)3(CO)3]+, abbreviated as [99mTc]Tc(CO)3. The reaction was carried out by reducing [99mTc]TcO4- under 1 atm of CO for 30 min at 70° C, followed by incubation with approximately 148 MBq of [99mTc]Tc(CO)3 for 30 min at 85°C. The radiochemical purity of [99mTc]Tc(CO)3-HYIGSR was assessed using TLC-SG strips with 0.9% NaCl as the eluent. A breast cancer animal model was established by inoculating female Balb/c nude mice with 1×10^7 MDA-MB-231 breast cancer cells. After 30 days, in vivo (molecular imaging) and ex vivo biodistribution studies were performed. The radiolabeled peptide was intravenously administered to both healthy and tumor-bearing female Balb/c nude mice, and ex vivo biodistribution analysis was conducted at 1 and 3 h post-injection. Molecular imaging of healthy mice was acquired via planar scintigraphy using a single-hole collimator on a Discovery VH clinical gamma camera, with an acquisition time of 5 min and a geometric magnification of 9 × . All animal experiments adhered to local ethical guidelines for animal research (Protocol number: CEUA – HIAE 6015-24). **Results:** The radiolabeling process using [99mTc]Tc(CO)3 was successfully standardized, yielding [99mTc]Tc(CO)3-HYIGSR with a radiochemical purity of 95.53 ± 1.19% (n = 5). Ex vivo biodistribution analysis in female Balb/c nude mice (n = 4) demonstrated rapid blood clearance