Nuclear Survivin as prognostic factor in oral squamous cell carcinoma (OSCC)

Disco
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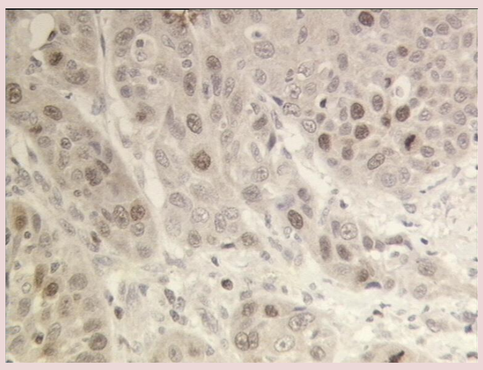
Aim: The aim of the present retrospective study was to correlate nuclear Survivin expression with clinico-pathological data and with prognosis in patients affected by OSCC.

Material and Methods: 152 samples from specimens of primary OSCC, were retrieved from Institute of Pathology. Clinical data was reviewed to record sex, age of patients, site and size of the lesion. Survival was calculated from the date of operation to the date of the latest follow-up visit or death due to cancer. Criteria for the tumor classification were based on the TNM classification and the WHO classification for histological differentiation. Patients in this study were analyzed for survival rates only if at least 12 months follow-up was available. The expression of Survivin was semi-quantitatively scored in the nucleus, by assessing the immunoreactivity score (IRS). This score was calculated by multiplying the percentage of positive cells (0: negative, 1: <10%, 2: 11-50%, 3: 51-80%, 4: >80% positive cells) with the staining intensity (0: negative,1: weak, 2: moderate, 3: intensive). OSCC patients were separated according to their IRS in 3 groups: group 1 (IRS 0-2), 2 (IRS 3-4), and 3 (IRS 6-8). The evaluation of the relationship between Survivin IRS and clinico-pathological findings was performed using Chi-squared test or Fisher exact test ($p < 0.05$). Disease-specific survival curves were calculated according to the Kaplan-Meier algorithm. The calculated survival rate was the maximum estimate of the true survival curve. Log rank test was used to compare survival curves ($p < 0.05$).

A



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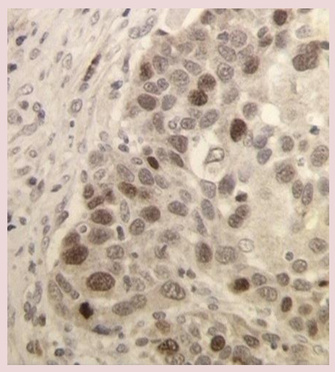

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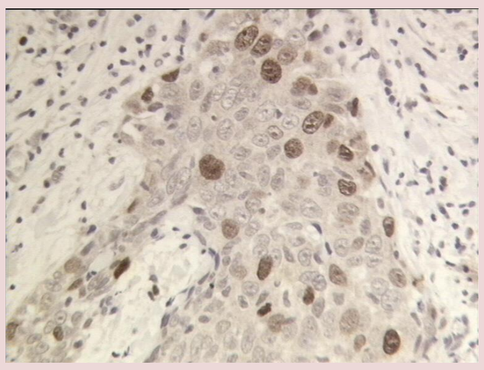
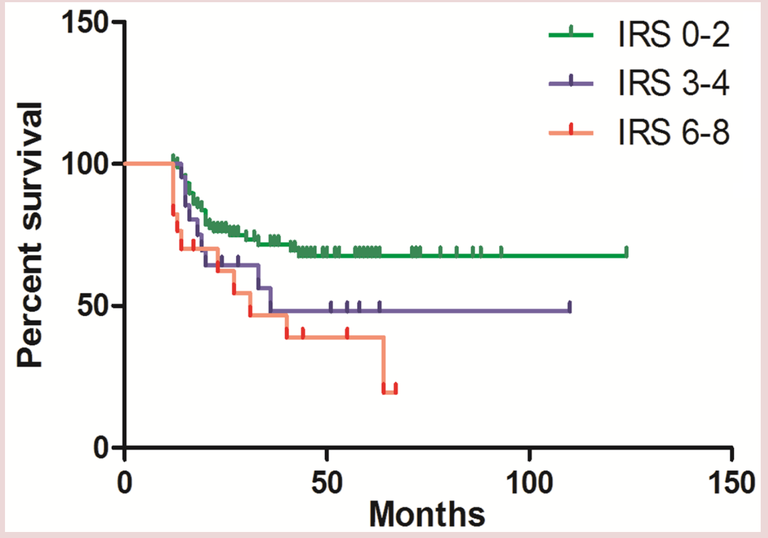
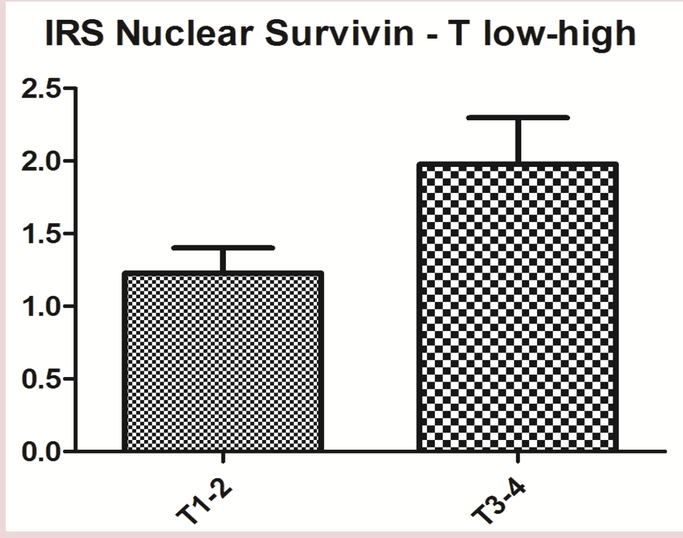


Results: The specimens were obtained from 96 males and 56 females. The age ranged from 28 to 98 years (mean age of 64 years). 49 cases were well differentiated, 75 moderately, and 28 poorly differentiated. There were 33 patients of stage I, 39 of stage II, 30 of stage III, and 50 of stage IV. There were 41 cases of T1, 52 of T2, 31 of T3, and 28 of T4. 58 patients showed lymph node metastases, while no cases of distant metastases were present. Results showed nuclear positivity for Survivin in 82 cases, while the normal cells did not express significant levels of Survivin. There were no statistically significant correlation between Survivin expression and age, sex, grading, and lymph node metastases. When comparing T stage, patients with small tumor size (T1+T2) showed lower Survivin levels than those found in patients with tumors of larger size (T3+T4) ($p < 0.05$), suggesting a relationship between tumor size and nuclear Survivin expression. Regarding the prognosis, 130 patients were taken into account. Survival ranged from 12 to 124 months (median overall survival of 27.5 months). The univariate analysis showed a negative effect of Survivin expression on survival rate. In fact, patients in group 1 (IRS 0-2) were associated to a better survival rates than those in groups 2 and 3 (IRS 3-4 and IRS 6-8). The differences of survival rates among these three groups were statistically significant (log-rank test, $p < 0.05$ and $p < 0.05$).

	No. (%)	Group 1 (IRS 0-2)	Group 2 (IRS 3-4)	Group 3 (IRS 6-8)	*p* value
Sex					
M	96 (63.2)	72	16	8	0.2388
F	56 (36.8)	47	5	4	
Age					
< 60	50 (32.9)	27	13	10	0.7450
> 60	102 (67.1)	55	31	16	
Grading					
G1	49 (32.2)	39	7	3	0.7009
G2	75 (49.3)	60	10	5	
G3	28 (18.4)	20	4	4	
T stage					
T1+T2	93 (69.1)	80	8	5	*< 0.001*
T3+T4	59 (30.9)	33	13	13	
Lymph node metastases					
N0	94 (61.8)	72	13	9	0.5919
N+	58 (38.2)	47	7	4	
Staging					
I+II	72 (47.4)	57	10	5	0.9183
III+IV	80 (52.6)	62	11	7	





Conclusions: Our results suggest that OSCC patients with higher nuclear Survivin have more extensive diseases. Furthermore, the expression of this protein at nuclear level predict a poor prognosis in these patients. Therefore, the evaluation of nuclear Survivin IRS may identify patients with more aggressive and disseminated disease, influencing follow-up and therapeutic protocols.

Di chi sara' il mondo di domani?
Di chi oggi canta in coro.

17 GIUGNO 2015
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