Dysregulation of heat shock protein 27 expression in oral tongue squamous cell carcinoma

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Overview

• Background (5)
• Methods (2)
• Results (9)
• Conclusion and Discussion (2)
Background

Oro-pharyngeal cancer (males)

Background

Oro-pharyngeal cancer (females)

Background

Oral squamous cell carcinoma

– 5-year survival rate >50%
– risk factors: alcohol, tobacco
– Oral tongue SCC: 40% of all OSCC
Background

Heat shock proteins

Khalil AA et al, Heat shock proteins in oncology: Diagnostic biomarkers or therapeutic targets? , Biochim Biophys Acta 2011 Dec
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Heat shock proteins

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Background

Heat shock protein 27

– increased expression in many types of cancers
– tumorigenic potential in vitro
– increase resistance to cytostatic anticancer drugs (e.g. cisplatin, vincristine, colchicine) and radiation therapy
Overview

• Background
• Methods (2)
• Results
• Conclusion and Discussion
Methods

Patients and tissues

• 80 cases of primary OTSCC (42 with follow-up data)
• 31 dysplastic lesions
• 15 normal tongue biopsies

• All patients received curative surgery

Wang et al, Dysregulation of heat shock protein 27 expression in oral tongue squamous cell carcinoma, BMC Cancer 2009
Methods

Immunohistochemical analysis

• HSP27 and Ki67

• light microscopy for evaluation of relative intensity

• absolute intensity was measured on a scale from 0-3 (no, low, moderate and high staining) in 10 random high power fields

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Overview

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Results

Normal tongue mucosa

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Dysplastic lesions

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Results

Poorly differentiated OTSCC

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Moderately differentiated OTSCC

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Results

Well differentiated OTSCC

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Lymph node metastasis

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Results

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### Results

**Association of Hsp27 expression and Ki67 index with differentiation***

<table>
<thead>
<tr>
<th></th>
<th>Hsp27 (IHC)</th>
<th>Ki67 index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Average</td>
</tr>
<tr>
<td>Well</td>
<td>46</td>
<td>1.90</td>
</tr>
<tr>
<td>Moderately</td>
<td>20</td>
<td>1.74</td>
</tr>
<tr>
<td>Poorly</td>
<td>14</td>
<td>1.34</td>
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\( p = 0.025872 \) \( (p = 0.061275) \)

*One-way ANOVA was used to assess the association of Hsp27 and Ki67 with grading.

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Results

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Overview

• Background
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• Conclusion and Discussion (2)
Conclusion

- Dysregulation of HSP27 expression increases with progression of OTSCC
- HSP27 expression associated with differentiation
- Relevance of correlation between HSP27 expression and age not clear at the moment
- Increased expression correlates with overall survival rate

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Discussion

• prognostic significance not clear
  – affected site
  – heterogeneity in oncogenic pathways

• other tumor types
  – good prognosis in NSCLC, endometrial adenocarcinoma
  – poor prognosis in gastric, liver and prostate carcinoma

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The End

Thank you for your attention.