The Tumor-Stroma Ratio (TSR) additional to the TNM classification?

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RF5-12 scientific studies
Track 2
Abstract presented before N

Disclosure of interest
Insight in tumor biology is changing!

Stroma surrounding cancer cells plays an important role in the development and behavior of the tumor.

The Tumor-Stroma-Ratio (TSR) parameter is based on this phenomenon.

A high amount of stroma present within the primary tumor results in worse patient outcome (stroma-high).

The TSR was discussed by the TNM Evaluation Committee (UICC) and the CAP (College American Pathologists). They advocated validation in a prospective multicenter study, development of consensus agreement and a quality assessment program.

First discovered in colon carcinoma.

Haematoxylin and eosin (H&E) stained 5 μm paraffin sections examined of the most invasive part of primary colon tumors. (A) Stroma-low (20%) and (B) stroma-high (80%).
Method

Easy, highly reproducible, confirmed in other cancer types

The scoring of the TSR can be performed at routine pathology analysis of the primary tumor using conventional microscopy, in short time (<2 min), without additional costs.

The scoring procedure is highly reproducible with good Kappa scores (K>0.80)

TSR is also confirmed in other types of cancers including breast, lung, cervical cancer and esophageal cancer.

Kaplan–Meier survival curves of OS and DFS of stroma-high versus stroma-low in the total CRC patient population (stages II and III) N = 710 [OS P < 0.0001, HR = 1.96 (95% CI 1.41–2.74); DFS P < 0.0001, HR = 2.15 (95%CI: 1.61–2.86)].

European study

Ten pathology centers in 6 countries in Europe already agreed in participation.

An e-learning module is being developed with a quality assessment program within the framework of the European Society of Pathology (ESP) EQA program.

The TSR will be scored by the international group of pathologists on patients with stage II-III colon cancer. The interobserver reliability and the reproducibility of the TSR will be determined using Kappa statistics.

Simultaneously a prospective study will start with the inclusion of stage II-III patients in this multicenter study cohort.