Towards improved chemo-radiotherapy for squamous cell carcinomas of the anus, by targeting the molecular biological features.

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Status on progression in study 1-4

Study 1.1: Circulating free DNA

Status: Published September 2020.

Study 1.2: Circulating tumor DNA

Status: Ready for submission December 2020.

Study 1.3: Hypoxia and immune status

Status: Planned

Aim: Analyses of the diagnostic biopsy from patients with SCCA, in order to evaluate the predictive and prognostic value of hypoxia and immune status.

Material and methods:

Diagnostic biopsy's from 100 patients with SCCA.

The hypoxia gene profile is analyzed using RNA extracted from tumor biopsies for qPCR reaction. Results from the HNSCC hypoxia classifier will be related to clinical outcome to examine if the same classifier can be used for SCCA. Positive results may be used as pilot data for a clinical trail on hypoxia modulating therapy for SCCA. In a small sample size of 10 patients from our cohort, we have conducted a pilot study with promising results.

Immune staining for PDL1 on tissue will be performed according to local SOP and results will be correlated to clinical outcomes from our cohort of 300 SCCA patients.

Results: Not evaluated

Study 2: Tree year evaluation

Status: data collection is ongoing

Aim: Reporting on tree year follow up from 200 patients treated for SCCA in Denmark from 2016-2018. Data on treatment effect, overall survival and recurrence free survival as well as reports on long-term physician and patient reported toxicity and QoL.

Material and methods: Data on treatment outcome and survival is collected prospectively using the electronic database RedCap. For evaluation of adverse events we uses the NCI-CTCAE version 4.0 and EORCT QOL C30, CR29 and CX24 scheme as well as the LARS score to cover relevant possible side effects. The analytical plan for evaluation on tree year's data from the PLAN-A study includes a descriptive presentation of treatment outcome with recurrence free survival, time to progression and overall survival. CTCAE data will be compared to EORCT

PROM data and QoL data. We will describe each symptoms fluctuation over time and as time to improvement/aggravation in line with recommendations in the SISAQOL guidelines (ref).

Results: Not evaluated.

Publications during the Ph.D.:

- Lefevre AC, Kronborg CS, Pallisgaard NP, Sørensen BS, Serup-Hansen E, Spindler KLG. Plasma HPV measurement for monitoring treatment effect in squamous cell carcinoma of the anus. DCCC RT annual meeting 2020, abstract, submitted.
- Lefèvre AC, Kronborg C, Sørensen BS, Krag SRP, Serup-Hansen E, Spindler KG. Measurement of circulating free DNA in squamous cell carcinoma of the anus and relation to risk factors and recurrence [published online ahead of print, 2020 Jul 3]. *Radiother Oncol*. 2020;150:211-216. doi:10.1016/j.radonc.2020.06.045
- Lefevre AC, Kronborg CS, Sørensen BS, Serup-Hansen E, Spindler KLG. Circulating free DNA in squamous cell carcinoma of the anus: Relation to risk factors and recurrence. ESTRO 2020 Vienna, Austria, oral OC-0335
- Kronborg CS, Serup-Hansen E, Wind K, Lefevre AC[1], Spindler KLG. Patient reported outcome and toxicity one-year after IMRT/VMAT based chemoradiotherapy for anal cancer. ESTRO 2020 Vienna, Austria, Oral