Kantonsspital St.Gallen

Cachexia and Toxicity: cachexia-based dosing vs. standard of care (CAT-Trial)

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Cancer cachexia is a frequent condition, characterized by muscle loss not reversible by nutrition only, caused by procatabolic (inflammatory) and hypoanabolic mechanism, with an impact on quality of life, function and survival. An association of muscle loss, which is a key factor of cancer cachexia, with anticancer treatment toxicity has been increasingly recognised with different chemotherapeutic compounds in retrospective studies, but mechanisms are still unclear. One hypothesis is that drug levels of chemotherapeutic drugs are elevated in cachectic patients, another includes neuro-hormonal effects of cachexia.
Our aim is to investigate further which of the factors occurring in cancer cachexia are associated with anticancer treatment toxicity and then prospectively test the effect of a "cachexia-based anticancer treatment-dosing (CAT)" on anticancer treatment toxicity in comparison to standard dosing in advanced cancer patients.
Our methods include a) the comparison of pharmacokinetics of anticancer drugs in patients with or without cachexia having toxicities, b) the development of a pilot tool CAT and its feasibility testing in oncology. Our group at KSSG is already involved in cancer cachexia classification, diagnosis, and phenotyping work (clinical, physical activity, laboratory, patient-reported outcomes, nutritional) and piloted tools (e.g. SACS, SIF, ERD, ActivPal, CRP). One missing link in the KSSG is the measurement of muscle mass, which currently requires DEXA or MRI. A novel method, already piloted and validated by collaborators, can reliably measure muscle mass from routine-CT's (Slice-O-matic). Existing pharmacokinetic datasets at KSSG, including 5-FU, paclitaxel and erlotinib, are available to explore one hypothesis.
As associated steps we seek collaborations with oncology clinical research groups to c) expand available retrospective datasets (e.g., CESAR), and d) plan a prospective phase II RCT (cancer types, therapy regimens, CAT-tool, endpoints, sample size, etc.). For step c and d applications for qualified funding (KLS, SAKK, EU-reintegration) is planned.
As significance of this project we expect to contribute to the current highly discussed fields reducing toxicities, optimizing QoL, and emerging importance of cachexia in supportive care, strengthen local capacities and local and international collaborations, and contribute with the planned CAT-trial to

potentially practice-changing oncology research in Switzerland.

keywords	cancer, cachexia, sarcopenia, toxicity, pharmacokinetics
type of project	clinical studies
status	ongoing - follow up
start of project	2014
end of project	2014
additional information	Anschubfinanzierung
study design	Retrospective Analyse, prospektiver Pilot
responsible person	PD Dr. med. Florian Strasser