The currently established fixed dose of oral targeted oncolytics may lead to suboptimal treatment of patients with cancer. Some of the oral targeted drugs are overdosed whereby more toxicity is introduced then required for treatment benefit. Some oral oncolytic drugs are suboptimally administered whereby specific side effects are seen that can be circumvented. Others show large interpatient variability that can be reduced by prevented. Several pharmacological approaches that could lead to a better toxicity – efficacy balance have been investigated. Study design and outcomes are shared that show the potential added value of pharmacological interventions to optimize the treatment with oral targeted anticancer drugs.

Therapeutic Drug Monitoring (TDM) of Tyrosine Kinase Inhibitors (TKIs): comparison with other groups of anticancer drugs and focus on drug-drug interaction (DDI)

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Learning objectives:

1. To understand why TDM has been developed and is used with TKIs, but not with cytotoxics and monoclonal antibodies.
2. To understand why the extent of DDI is very different with various TKIs

Abstract:

Therapeutic Drug Monitoring (TDM) of Tyrosine Kinase Inhibitors (TKIs) has become a standard practice. However, its use is limited to certain specific situations with cytotoxics and not at all with monoclonal antibodies. The reasons for this discrepancy will be developed. Moreover, if TKIs appear to be a rather homogeneous group of drugs based on their pharmacokinetic characteristics (e.g., most are eliminated by the hepatic metabolism and are CYP3A4 substrates), the extent of DDI nevertheless varies greatly between them, thus justifying TDM. The link between their oral bioavailability and the extent of drug exposure resulting from DDI will be described.