Trial Description

Title

Evaluation of the predictive power of the CD147/EMMPRIN concentration in peripheral blood of patients with multiple myeloma

Trial Acronym

IMiD-Praedict

URL of the trial

[---]*

Brief Summary in Lay Language

In the treatment of multiple myeloma the response assessment is done by measuring the levels of certain proteins ("paraproteins") in blood and/or urine and by bone marrow analysis. An early evaluation of a successful response to treatment is often difficult and takes usually several weeks. In an article published in "Nature medicine" 2016 a research group (Eichner, R. Nat Med, 2016. 22(7): p. 735-743.) reported about a new discovered molecular pathway that describes the mechanism of a certain group of drugs (“IMiDs”) which are used in the treatment of multiple myeloma. IMiDs suppress the expression of a certain protein complex called CD147-MCT1 on the cell surface of multiple myeloma cells. CD147 can be measured in peripheral blood of healthy persons in low concentrations. In this trial CD147 concentrations of patients with multiple myeloma are measured in peripheral blood at the start of a new treatment regimen and during the period of treatment. The aim of the study is to evaluate if the CD147 concentration in peripheral blood is suitable as an early predictive parameter for treatment response in patients with multiple myeloma. Patients are treated according to the internationally accepted treatment guidelines and published trial data. The trial does not intervene in the treatment decisions of the physician in charge. Additional blood samples are taken at certain timepoints during the usual treatment visits. To take part in the trial patients have to be 18 years and/or older, have to have a multiple myeloma with a measurable "paraprotein" and have to be treated at the department of internal medicine III of university hospital of the technical university of Munich.

Brief Summary in Scientific Language

Prospective, non-randomized, non-interventional trial to evaluate the CD147 concentrations in the peripheral blood of patients with multiple myeloma for the development of a marker for early response assessment. Secondly, evaluation if there is an association between the CD147 concentrations in peripheral blood and disease state and/or prognosis.
Basic research has shown that CD147 plays an important role in the pathogenesis of multiple myeloma. Eichner et al. (Nature medicine, 2016. 22(7): p. 735-743) were able to show that IMiDs (“immunomodulatory drugs”) suppress via interaction with the Cereblon-CD147-MCT1 complex the expression of CD147 on the cell surface of multiple myeloma cells in vitro and in vivo. This is potentially a new described important pharmacological mechanism of IMiDs. CD147 is released

from the cell surface to the surrounding tissue via limited proteolysis of the matrix metalloprotease MT1-MMP. Therefore, a soluble form of CD147 can be measured in the peripheral blood (Egawa, N. Journal of Biological Chemistry, 2006. 281(49): p. 37576-37585). Arendt et al. (Leukemia, 2012. 26(10): p. 2286-2296) and Panchabhai et al. (Leukemia, 2016. 30(4): p. 951-954) reported that on multiple myeloma cells the expression of CD147 is increased and that high expression levels of CD147 on myeloma cells in the bone marrow are associated with a worse prognosis. Gross et al. (Blood, 2016. 128: p. 5652) found that high serum levels of CD147 are associated with a worse prognosis concerning success of treatment and with a shorter progression free survival. The aim of the trial is to evaluate if the CD147 concentration in the peripheral blood of patients with multiple myeloma correlates with the disease activity and treatment response and if CD147 can be used as an early predictive marker for treatment response. The treatment follows international accepted treatment guidelines and the trial does not intervene in the treatment decision of the physician in charge.

Organizational Data

- DRKS-ID: **DRKS00014659**
- Date of Registration in DRKS: **2018/04/24**
- Date of Registration in Partner Registry or other Primary Registry: **[---]***
- Investigator Sponsored/Initiated Trial (IST/IIT): **yes**
- Ethics Approval/Approval of the Ethics Committee: **Approved**
- (leading) Ethics Committee Nr.: **534/17 S , Ethik-Kommission der Fakultät für Medizin der Technischen Universität München**

Secondary IDs

- Universal Trial Number (UTN): **U1111-1212-6758**

Health condition or Problem studied

- ICD10: **C90.0 - Multiple myeloma**

Interventions/Observational Groups

- Arm 1: **Trial subjects: Patients having a multiple myeloma and measurable paraprotein levels before the start of treatment with newly diagnosed multiple myeloma or before adjustment of medication with a refractory multiple myeloma or a relapse of a multiple myeloma. Healthy control group for comparison of CD147 serum levels between healthy persons and patients having multiple myeloma. Procedure: usual treatment of patients in the department of internal medicine III of the university clinics of the technical university munich. During the routine visits in the clinics additional blood samples (ca. 5ml per sample) are collected for measuring CD147 serum concentrations with an ELISA-kit. The collection of blood samples takes place**

on visit 1 = day 1, visit 2 = day 8, visit 3 = day 15, visit 4 = day 22, visit 5 = day 29-43, visit 6 = day 57-64. After the main part of the trial follows a two year-follow-up-period in which blood samples are collected quarterly. Aim: 1.) Comparison of CD147 serum levels between healthy persons and patients having multiple myeloma. 2.) Evaluation if the CD147 serum levels decrease under treatment and if this decrease correlates with the decrease of the paraprotein levels. 3.) Does the decrease of the CD147 levels happen significantly earlier than the decrease of the paraprotein levels and is the measurement of the serum CD147 levels suitable as an earlier predictive parameter for the prediction of treatment response? As a non-interventional trial, the trial does not intervene in the decisions concerning diagnostics and treatment made by the physician in charge.

Characteristics

- Study Type: **Non-interventional**
- Study Type Non-Interventional: **Other**
- Allocation: **Other**
- Blinding: **[---]***
- Who is blinded: **[---]***
- Control: **Other**
- Purpose: **Prognosis**
- Assignment: **Other**
- Phase: **N/A**
- Off-label use (Zulassungsüberschreitende Anwendung eines Arzneimittels): **N/A**

Primary Outcome

Superiority of the analysis of the CD147 serum levels under treatment as an earlier predictive marker for the prediction of treatment response compared to the standard procedure of analysing changes in paraprotein levels.

Secondary Outcome

Can the CD147 serum level be used as an prognostic biomarker for the prediction of response (CR, VGPR, PR, ORR, etc.), progression free survival (PFS) and overal survival (OS)? Comparison of the CD147 serum levels of patients having multiple myeloma with healthy persons. Is it possible to define a threshold value for the prediction of a worse prognosis concerning response, progression free survival and overall survival?

Countries of recruitment

- DE **Germany**

Locations of Recruitment

- University Medical Center **Klinikum rechts der Isar, Klinik und Poliklinik für Innere Medizin III, München**

Recruitment

- Planned/Actual: **Actual**
- (Anticipated or Actual) Date of First Enrollment: **2018/04/19**
- Target Sample Size: **40**
- Monocenter/Multicenter trial: **Monocenter trial**
- National/International: **National**

Inclusion Criteria

- Gender: **Both, male and female**
- Minimum Age: **18 Years**
- Maximum Age: **no maximum age**

Additional Inclusion Criteria

Start/change of treatment of a patient with newly diagnosed/relapsed Multiple Myeloma with measurable paraprotein;
performance status ECOG </= 3;
Patients have to be treated routinely in the departement of internal medicine III of the university clinics of the technical university Munich.

Exclusion criteria

non-secretory multiple myeloma;
HIV/ active Hep B/C infection;
other malignant disease

Addresses

- **Primary Sponsor**

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Sources of Monetary or Material Support

■ **Institutional budget, no external funding (budget of sponsor/PI)**

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Status

- Recruitment Status: **Recruiting ongoing**
- Study Closing (LPLV): **[---]***

Trial Publications, Results and other documents

- Approval of ethics comm. (mandatory for transfer to Studybox) **Ethikvotum**
- trial protocol (mandatory for transfer to Studybox) **Protokoll**

** This entry means the parameter is not applicable or has not been set.*

**** This entry means that data is not displayed due to insufficient data privacy clearing.*