PLEASE NOTE: *This trial has been registered retrospectively.*

Trial Description

Title

Description of mechanistic processes and detection of novel biomarkers during exacerbation in children and adolescents with bronchial asthma and chronic bronchitis/Wheeze.

Trial Acronym

[---]*

URL of the trial

https://www.helios-gesundheit.de/kliniken/wuppertal/

Brief Summary in Lay Language

For several years we have been observing a worldwide increase in the number of patients suffering from allergic diseases and bronchial asthma. The prevalence of these diseases varies regionally, in Germany it is currently estimated to be between 8-12.5 %. The diagnosis of bronchial asthma is based on a national/international recommendations including lung function and clinical symptoms usually from the age of 5-6 years (GINA/ISAAC/NVL); children below this age with recurrent bronchial/allergic symptoms are classified as chronic bronchitis or wheezer. A certain percentage of this group shows progression and eventually develops bronchial asthma in later childhood.
Bronchial asthma provides a heterogenic clinical picture, which can be associated with acute exacerbations, mainly due to seasonal factors. Depending on the underlying clinical appearance, recurrent bronchitis episodes/asthma attacks may occur. In order to improve the quality of life of these patients, it is essential to prevent exacerbations and to achieve efficient lung function parameters through rapid diagnostic and therapeutic measures. Since bronchial asthma and chronic bronchitis in children and adolescents are quite heterogeneous diseases, the aim of this observational study is to describe molecular mechanisms during exacerbation and potential biomarkers for clinical routine in order to identify the similarities and differences between these two disease groups.

Brief Summary in Scientific Language

In summary, the main focus of this clinical and basic research-oriented work is to describe and evaluate the (partly already described) signalling cascades during exacerbation for our cohort, including the analyses of the involved interleukins and chemokines, with the aim to describe new biomarkers. To follow this approach, we will also analyze signaling molecules and characterize cells in the bioliquids of the study cohort, as well as characterize the role of pathogens (bacteria, viruses, fungi etc.) during exacerbation, with the aim to describe new pheno- and endotypes.
Differentiated molecular biological and immunological methods will be used. The importance of biological libraries (e.g. 'omics-science') will be analyzed together

with clinical item parameters and their clinical relevance will be highlighted in multivariate analyses in order to find a new approach to the above mentioned questions or to define new hypotheses.

Do you plan to share individual participant data with other researchers?

[---]*

Description IPD sharing plan

[---]*

Organizational Data

- DRKS-ID: **DRKS00015738**
- Date of Registration in DRKS: **2018/10/31**
- 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.: **158/2017 , Ethik-Kommission der Universität Witten/Herdecke**

Secondary IDs

Health condition or Problem studied

- ICD10: **J45.0 - Predominantly allergic asthma**
- ICD10: **J45.1 - Nonallergic asthma**
- ICD10: **J45.8 - Mixed asthma**
- ICD10: **J45.9 - Asthma, unspecified**
- ICD10: **J20.9 - Acute bronchitis, unspecified**
- ICD10: **J40 - Bronchitis, not specified as acute or chronic**
- ICD10: **J42 - Unspecified chronic bronchitis**
- ICD10: **J20 - Acute bronchitis**
- ICD10: **J44 - Other chronic obstructive pulmonary disease**
- ICD10: **J41.0 - Simple chronic bronchitis**
- ICD10: **J41.1 - Mucopurulent chronic bronchitis**
- ICD10: **J41.8 - Mixed simple and mucopurulent chronic bronchitis**

Interventions/Observational Groups

- Arm 1: **For this study, children and adolescents with bronchial asthma and wheeze/chronic bronchitis will be recruited. Study centers are the Center for Pediatric and Adolescent Medicine of the Helios University Hospital Wuppertal/University of Witten/Herdecke (HUKW) and Pediatric and Adolescent Medicine, Pediatric Neurology Helios Klinikum Niederberg (HKN) (Academic Teaching Hospital of the University of Duisburg/Essen).**

  Symptoms such as acute shortness of breath, increasing cough, wheezing-like symptoms including a whistling or gushing sound of breathing and/or acute respiratory deterioration may be considered as exacerbation for this study. After further review of the inclusion and exclusion criteria and obtaining consent, these patients may be included in this study.
  Initially, the emergency clinical treatment of the patient during his acute symptomatology/exacerbation will be performed in cooperation with the treating physician and parallel collection of biomaterials (including blood, smears, nasal brushing, sputum) will be performed. Depending on the clinical stabilization or improvement in the course and depending on the cooperation, a lung function test is performed.

  This is followed by two further follow-up visits (1st follow-up visit 14-28 days after discharge by a telephone conversation and 2nd follow-up visit 28 days - 3 months after discharge in the course of a clinical visit with physical examination, including a lung function test and collection of biomaterials). Follow-up visits should be performed to evaluate the clinical course for comparison.

  In addition, a healthy control cohort will be recruited. Study patients between the age of 3 months and 65 years of age may be enrolled at the study centers after appropriate education, consent and review of inclusion and exclusion criteria. Healthy children who are already at the study centers for other indications can also be characterized as healthy individuals and included in the study.

  Possible complications during study visits:

  Serious complications during peripheral venous blood collection are negligible. In very rare cases, there may be circulatory problems, infection, thrombosis or skin, soft tissue or nerve injury from the puncture. Nasopharyngeal swabs/nose brushing can occasionally cause sneezing irritation and slight nosebleeds due to skin-soft tissue nerve injury.
  In rare cases, the repeated inhalation and exhalation manoeuvres during pulmonary function tests may cause symptoms of typical hyperventilation (e.g. headaches, tingling sensations in the extremities, shifting of the electrolyte balance up to disturbances of consciousness).

Characteristics

- Study Type: **Interventional**
- Study Type Non-Interventional: **[---]***
- Allocation: **Single arm study**
-

Study Type: **Interventional**

Study Type Non-Interventional: **[---]***

Allocation: **Single arm study**

Blinding: **[---]***

- Who is blinded: **[---]***
- Control: **Uncontrolled/Single arm**
- Purpose: **Basic research/physiological study**
- Assignment: **Single (group)**
- Phase: **N/A**
- Off-label use (Zulassungsüberschreitende Anwendung eines Arzneimittels): **N/A**

Primary Outcome

Clinical course 3 month after exacerbation; comparison of experimental parameters/results between acute exacerbation and clinically healthy condition

Secondary Outcome

none

Countries of recruitment

- DE **Germany**

Locations of Recruitment

- University Medical Center **Zentrum für Kinder- und Jugendmedizin, Helios Universitätsklinikum Wuppertal, Universität Witten/Herdecke, Wuppertal**
- Medical Center **Kinder- und Jugendmedizin, Kinderneurologie Helios Klinikum Niederberg – Akademisches Lehrkrankenhaus der Universität Duisburg/Essen , Velbert**

Recruitment

- Planned/Actual: **Actual**
- (Anticipated or Actual) Date of First Enrollment: **2017/12/01**
- Target Sample Size: **300**
- Monocenter/Multicenter trial: **Multicenter trial**
- National/International: **National**

Inclusion Criteria

- Gender: **Both, male and female**
- Minimum Age: **3 Months**
- Maximum Age: **65 Years**

Additional Inclusion Criteria

The following inclusion criteria apply to the asthma cohort: Study patients with previously diagnosed bronchial asthma who are between ≥ 5-6 and < 18 years of age can be included. In addition, study patients with a previously undiagnosed bronchial asthma but with a history of asthma typical symptoms and with current respiratory symptoms (in the sense of an initial diagnosis) can also be included. The diagnosis of bronchial asthma is based on national and international guidelines (GINA, ISAAC, NVL). See also the exact diagnostic criteria for bronchial asthma in the literature. In addition, there must be no preterm birth and a partus ≥ 37. SSW must have taken place. Other underlying diseases as well as postnatal respiratory adaptation disorders are considered as exclusion criteria.

The inclusion criteria of the Wheezer cohort are as follows. Subjects with recurrent obstructive bronchitis episodes between the ≥ 3. months to ≤ 5./6. year of life with at least 2 obstructive bronchitis episodes, at least one outpatient and one inpatient treatment (the current inpatient presentation can also be considered as one disease episode) fulfill the inclusion criteria. Since this cohort description and the diagnosis in the literature are quite heterogeneous, we have decided on this number of disease episodes. Furthermore, the same exclusion criteria apply as for the asthma cohort.

For the so-called healthy cohort, the following inclusion criteria apply: healthy children and adolescents between the age of ≥ 3 months and < 65 years with no underlying chronic disease, no postnatal adaptation included, no mechanical respiratory support, and no developmental delay, no long-term medication, and no febrile infection in the last 3 weeks.

Exclusion criteria

See also inclusion criteria, furthermore missing inclusion criteria and Lack of consent of the patient or guardian.

Addresses

- **Primary Sponsor**

  Zentrum für Kinder- und Jugendmedizin, Zentrum für Forschung in der Klinischen Medizin, Helios Universitätsklinikum Wuppertal, Universität Witten/Herdecke
  Mr. Prof. Dr. Stefan Wirth
  Heusnerstr. 40
  42283 Wuppertal

Primary Sponsor

Zentrum für Kinder- und Jugendmedizin, Zentrum für Forschung in der Klinischen Medizin, Helios Universitätsklinikum Wuppertal, Universität Witten/Herdecke
Mr. Prof. Dr. Stefan Wirth
Heusnerstr. 40
42283 Wuppertal
Germany

Telephone: **02028962384**
Fax: **02028962546**
E-mail: **stefan.wirth at helios-gesundheit.de**
URL: **www.helios-gesundheit.de**

■ **Contact for Scientific Queries**

Zentrum für Kinder- und JugendmedizinHelios Universitätsklinikum WuppertalUniversität Witten/Herdecke
Mr. Professor Dr. Stefan Wirth
Heusnerstr. 40
42283 Wuppertal
Germany

Telephone: **00492028962384**
Fax: **00492028962546**
E-mail: **stefan.wirth at helios-gesundheit.de**
URL: **https://www.helios-gesundheit.de/kliniken/wuppertal/**

■ **Contact for Public Queries**

Zentrum für Kinder- und JugendmedizinHelios Universitätsklinikum WuppertalUniversität Witten/Herdecke
Mr. Malik Aydin
Heusnerstr. 40
42283 Wuppertal
Germany

Telephone: **00492028962384**
Fax: **00492028962546**
E-mail: **malik.aydin at helios-gesundheit.de**
URL: **https://www.helios-gesundheit.de/kliniken/wuppertal/**

■ **Contact for Scientific Queries**

Zentrum für Kinder- und JugendmedizinHelios Universitätsklinikum WuppertalUniversität Witten/Herdecke
Mr. Malik Aydin
Heusnerstr. 40
42283 Wuppertal
Germany

Contact for Scientific Queries

Zentrum für Kinder- und JugendmedizinHelios Universitätsklinikum WuppertalUniversität Witten/Herdecke
Mr. Malik Aydin
Heusnerstr. 40
42283 Wuppertal
Germany

Telephone: **00492028962384**
Fax: **00492028962546**
E-mail: **malik.aydin at helios-gesundheit.de**
URL: **https://www.helios-gesundheit.de/kliniken/wuppertal/**

■ **Collaborator, Other Address**

Kinder- und Jugendmedizin, Kinderneurologie Helios Klinikum Niederberg – Akademisches Lehrkrankenhaus der Universität Duisburg/Essen
Mr. Dr. Sören Lutz
Robert-Koch-Straße 2
42549 Velbert
Germany

Telephone: **02051 9820**
Fax: **[---]***
E-mail: **soeren.lutz at helios-gesundheit.de**
URL: **https://www.helios-gesundheit.de/kliniken/niederberg/unser-angebot/unsere-fachbereiche/kinder-und-jugendmedizin/**

■ **Contact for Public Queries**

Kinder- und Jugendmedizin, Kinderneurologie Helios Klinikum Niederberg – Akademisches Lehrkrankenhaus der Universität Duisburg/Essen
Mr. Dr. Sören Lutz
Robert-Koch-Straße 2
42549 Velbert
Germany

Telephone: **02051 9820**
Fax: **[---]***
E-mail: **soeren.lutz at helios-gesundheit.de**
URL: **https://www.helios-gesundheit.de/kliniken/niederberg/unser-angebot/unsere-fachbereiche/kinder-und-jugendmedizin/**

Sources of Monetary or Material Support

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

Zentrum für Kinder- und Jugendmedizin, Zentrum für Forschung in der Klinischen Medizin, Helios Universitätsklinikum Wuppertal, Universität Witten/Herdecke
Mr. Prof. Dr. Stefan Wirth

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

Zentrum für Kinder- und Jugendmedizin, Zentrum für Forschung in der Klinischen Medizin, Helios Universitätsklinikum Wuppertal, Universität Witten/Herdecke
Mr. Prof. Dr. Stefan Wirth
Heusnerstr. 40
42283 Wuppertal
Germany

Telephone: **02028963831**
Fax: **02028962546**
E-mail: **stefan.wirth at helios-gesundheit.de**
URL: **www.helios-gesundheit.de**

Status

- Recruitment Status: **Recruiting ongoing**
- Reason, if "Recruitment stopped after recruiting started" or "Recruiting withdrawn before recruting started": **[---]***
- Reason, if Reason for Recruiting Stop "Other": **[---]***
- Study Closing (LPLV): **[---]***
- Number of Participants in Germany after Recruiting complete: **[---]***
- Total Number of Participants (all Sites worldwide) after Recruiting complete: **[---]***

Trial Publications, Results and other documents

** 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.*