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Prevention and therapy of respiratory disease in children using nasal sprays

Submission date	Recruitment status	[_] Prospectively registered
26/04/2012	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
02/05/2012	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
11/09/2012	Respiratory	

Plain English summary of protocol

Background and study aims
Upper respiratory tract infection (common cold) is one of most widespread diseases worldwide; however, no effective therapy for this condition has been developed so far.
Aim of this study was to test the hypothesis that treatment with nasal spray containing carrageenan was superior to placebo (saline solution) nasal spray in children with common cold.

Who can participate?
Patients could participate if they were of age of 1 to 18 years (inclusive) and had early (up to 36 hours duration) symptoms of common cold.

What does the study involve?
All participants that met inclusion criteria received either nasal spray containing carrageenan or saline solution nasal spray which was to be used 3 times daily during one week. Afterwards all participants had to be followed up till day 21 after inclusion. During whole study period all patients (or their parents) had to keep a diary recording either intensity of 8 symptoms ((headache, muscle ache, chilliness, sore throat, blocked nose, runny nose, cough and sneezing) using a 4-point scale (during first 9 days) or answering a question whether they had any symptoms of common cold (during days 8-21). Additionally, at Visit 1 (day 1) and 2 (days 3-4) nasal fluid was collected. After study end duration of disease, intensity of symptoms over time and viral load in nasal fluid was compared in groups receiving carrageenan spray treatment and placebo.

What are the possible benefits and risks of participating?
There was no immediate benefit for study participants; however, there was possible future benefit for society resulting from development new safe and effective therapy for common cold.
No significant risks were anticipated.

Where is the study run from?
St. Anna Children´s Hospital (Vienna, Austria)

When is study starting and how long is it expected to run for?
This study was running from 2st January, 2009 (initiation) till 23 December, 2009 (close-out).

Who is funding the study?
Marinomed Biotechnologie GmbH, Vienna, Austria

Who is main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Study information

Scientific Title
Prevention and therapy of virally induced respiratory disease in children using nasal sprays containing carrageenan

Study objectives
1. To evaluate the effect of the nasal spray on the severity of common cold symptoms compared to placebo treatment
2. To evaluate the effect of the nasal spray compared to placebo treatment with respect to symptom-free days during the observation period of 21 days
3. To investigate the effects of the nasal spray on the presence of biomarkers and common cold viruses in nasally secreted fluid samples

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ethics Committee of the St. Anna Children´s Hospital, 19 January, 2009

Study design
Randomised double-blind two-centre parallel group placebo-controlled study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Early symptoms of upper respiratory tract infection (URTI) in children

Interventions
Coldamaris prophylactic gel nasal spray versus matching placebo (saline solution) nasal spray, 3 times a day for 7 days

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Coldamaris (carrageenan)

Primary outcome(s)
The primary efficacy variable was the total symptom score (TSS) (sum of 8 symptoms), mean of study days 2-7.
Definition of TSS:
Sum of 8 individual symptom scores (headache, muscle ache, chilliness, sore throat, blocked nose, runny nose, cough and sneezing) was assessed on a 4-point scale (0 = none up to 3 = severe symptoms).
Maximum score for TSS was 24 for each time point of registration. For statistical analysis, the TSS scores of study days 2-7 were summarized per patient, and an individual mean was calculated.

Key secondary outcome(s))
Secondary efficacy variables:
1. TSS on separate study days
2. Total systemic symptom scores (TSSsys: headache, muscle ache, chilliness) mean of study days 2-4, and on separate study days
3. Local symptom scores (TSSloc: sore throat, blocked nose, runny nose, cough, and sneezing) mean of study days 2-4 and on separate study days
4. Individual symptom scores (ISS: headache, muscle ache, chilliness, sore throat, blocked nose, runny nose, cough and sneezing) on separate study days
5. Number of days without symptoms during the observation period.
6. Consumption of medication (additional to study treatment).

Exploratory efficacy variables:
1. Subjects opinion of the study product was assessed using a VAS scale (0-10). Units: cm. 0 = poor, 10 = excellent
2. Subjects willingness to use the product in the future, was assessed using an ordinal scale: Strongly agree/Agree/Disagree/Strongly disagree

Nasal secreted fluid:
To investigate the effects of the nasal spray on the presence of biomarkers and common cold viruses in nasal secreted fluid samples, the following efficacy variables were used:

1. Identification and quantification of virus: Influenza virus type A and B, Respiratory Syncytial Virus type, Parainfluenza type 1-3, Rhinovirus (major and minor group viruses), Human Metapneumovirus, as well as either Corona virus type OC43, or Corona virus type 229E.
2. Determination of the concentration of cytokines using a Multiplex array:
EGF, Eotaxin, FGF-3, Flt-3 Ligand, Fractalkine, G-CSF, GM-CSF, GRO, IFN-gamma, IFN-alpha-2, IL-10, IL-12 p40, IL-12p70, IL-13, IL-15, IL-17, IL-1-alpha, IL-1-beta, IL-1-receptor antagonist, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IP-10, MCP-1, MCP-3, MDC, MIP-1-alpha, MIP-1-beta, CD40-ligand, sIL-2 receptor alpha, TGF alpha, TNF-alpha, TNF-beta, VEGF

Completion date
23/12/2009

Eligibility

Key inclusion criteria
1. Age < 18 years
2. Age > 1 years
3. Parents had given informed consent, and received a copy of signed consent form prior to any study related procedures
4. Symptoms of Upper Respiratory Tract Infection (URTI), such as rhinitis/nasal obstruction /sneezing or cough or sore throat or otitis
5. Subjects or their parents considered that the subjects were in an early stage of a common cold with symptoms no more than 36 hours duration
6. Subjects had a symptom score of at least 1 and no more than 9 of sum of severity scores on entry to the study. The score was calculated by summing 8 symptom scores (headache, muscle ache, chilliness, sore throat, nasal obstruction, nasal discharge, cough, and sneezing) with each item rated 0 = absent, 1 = mild, 2 = moderate, 3 = severe
7. Subjects or their parents agreed to refrain from taking any products intended to prevent, intervene in, or treat cough/colds/flu, starting at study entry and continuing through day 7
8. The following were specifically disallowed:
8.1. Antihistamines, decongestants, antitussives, combination cold products, antivirals, oral or nasal steroids, all nasal sprays, any cold-directed herbal treatment (e.g. andrographis, echinacea, garlic, ginger, ginseng, pelargonium, propolis), and any supplement or lozenge containing ≥ 10 mg zinc or ≥ 100mg vitamin C).
8.2. Eating food cooked with garlic or ginger was allowed. Use of a daily multivitamin was allowed.
8.3. Analgesics, especially nonsteroidal anti-inflammatory drugs, were discouraged. Subjects with pain requiring medication were requested to use acetaminophen (paracetamol) and to record such use for consideration in statistical analysis.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Child

Upper age limit
18 years

Sex
All

Key exclusion criteria
1. No informed consent
2. Known hypersensitivity or allergy to any component of the test product
3. Severe cardiovascular, endocrinological, neurological, respiratory, gastrointestinal disease or a history or any current disease that was considered by the investigator as a reason for exclusion
4. Severe nasal septal deviation or other noninfectious condition that could have caused nasal obstruction
5. A history of any nasal or sinus surgery in the past that in the opinion of the investigator had might influenced symptom scores
6. Current medication other than oral contraception, that was considered by the investigator as a reason for exclusion e.g. systemic steroids or intranasal medication
7. Recent treatment of common cold that in the opinion of the investigator might influence symptom scores (e.g. antihistamines, decongestants, antitussives, combination cold products, antiviral, steroids, all nasal sprays, any cold-directed herbal treatment, and any supplement or lozenge containing ≥ 10 mg zinc or ≥ 100 mg vitamin C)
8. An unrelated infection that in the opinion of the investigator might influence the symptom scores (gastrointestinal infection, other viral diseases such as measles, mumps)
9. The subject was related to any study personnel, or had any other close ties or conflicts of interest with the research team or the study sponsor
10. The subject had received any investigational drug or had participated in a clinical trial within 4 weeks of entry to this study
11. The subject had a clinically significant disease that could have interfered with participation in the study, with the intervention being studied, or with the evaluation of symptoms. Specific exclusions included immune deficiency, autoimmune disease, and substantive cardiovascular, endocrinological, neurological, respiratory, or gastrointestinal disease. A history of allergic rhinitis with current eye or nose itching or sneezing, chronic obstructive pulmonary disease with current cough will also be exclusions. A symptomatic disease such as elevated blood pressure or cholesterol had not to be a reason for exclusion.

Date of first enrolment
21/01/2009

Date of final enrolment
23/12/2009

Locations

Countries of recruitment
Austria

Study participating centre
St. Anna Childrens Hospital
Vienna
Austria
1090

Sponsor information

Organisation
St. Anna Childrens Hospital (Austria)

ROR
https://ror.org/02qb3f692

Funder(s)

Funder type
Industry

Funder Name
Marinomed Biotechnologie GmbH (Austria)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	05/09/2012		Yes	No