Additional file 1. Management of adverse events

1. Definition

Adverse event (AE) (article R1123-46 of the public health code): Any harmful event occurring in a person who undergoes research, whether or not this event is related to the research or the product on which this research is based.

Serious Adverse Event / Effect (SAE) (article R1123-46 of the public health code and ICH E2B guide): Any adverse event that:

- Leads to death.
- Endangers the life of the person undergoing the research.
- Leads to hospitalization or prolongation of hospitalization.
- Leads to significant or lasting disability or handicap.
- Results in a congenital anomaly or malformation.
- Does not meet the qualifications listed above but may be considered "potentially serious" (certain biological abnormalities), is considered a relevant drug in the judgment of the investigator, and requires medical intervention to prevent progression to a precipitous condition.

The term "life-threatening" is reserved for an immediate life-threatening situation at the time of the adverse event, regardless of the consequences of corrective or palliative therapy.

Unexpected Adverse Reaction (UAR): Any adverse reaction whose nature, severity or course is not consistent with the information contained in the guidelines recognized by the authorities.

Suspected Unexpected Severe Adverse Reaction (SUSAR): An adverse reaction whose nature, severity/intensity or course is not consistent with the information contained in Investigator's Brochure or Protocol.

Expected Serious Adverse Effect (EIGA): Any effect defined in the protocol as expected.

New fact (article R1123-46 of the public health code): Any new data that may lead to a reassessment of the benefit/risk ratio of the product under investigation, to changes in the use of this product, in the conduct of the research, or in the documents relating to the research, or to the suspension or interruption or modification of the research protocol or similar research.

The following will NOT be considered as an SAE:

- An event resulting in a transient move to a hospital consultation, door-to-door service, or day hospital.
- Hospitalizations (more than one night on site) or prolongations of hospitalizations for the following reasons:
    - Scheduled hospitalization for routine procedures or treatments that are part of a pre-defined monitoring or therapy program.
    - Hospitalization or intervention required by protocol.
    - Hospitalization for comfort or for a social reason (e.g., hospitalization of an elderly person in a relationship of dependence with a spouse who has just been hospitalized).
    - Elective hospitalization not associated with a worsening of the clinical condition and not related to the objective of the clinical study and taking place during the clinical study (e.g., cosmetic surgery).
    - Infectious complications treated on an outpatient basis and not leading to hospitalization.

2. Types of adverse events

Risks related to bariatric surgery:

In the event of too much stress during physical activity due to the very reduced food intake and rapid weight loss, vagal discomfort, benign dizziness, and functional hypoglycemia may rarely occur.
Dumping syndrome, a discomfort specifically linked to bariatric surgery, could potentially occur during physical activity without any direct link with it.

Expected risks related to the study procedures:

Muscle contractures may occur during the physical activity program or during the 6-minute walk test.

3. Behavior to be observed

In order to avoid the occurrence of an adverse event, patients are asked not to carry out the exercises alone, to always have someone close to them available in case of an adverse event and, especially if discomfort has already occurred, to be attentive to the first signs in order to adopt the appropriate course of action.

The action to be taken for each adverse event is:

Vagal malaise or functional hypoglycemia: the patient becomes pale during exercise and more often during recovery, may complain of nausea and lightheadedness, may present sweating and hot flashes, and describes sudden fatigue.
1. Stop the effort.
2. Lie flat with legs elevated or bent.
3. Notify a doctor (call 15).

Dumping syndrome: the patient becomes pale, has hot flashes, sweats, palpitations and tachycardia, and complains of abdominal pain or gagging.
1. Stop the effort.
2. Lie flat with legs raised or bent.
3. In conjunction with the health care team, adapt dietary and behavioral measures (e.g., increase time allocated to eating, avoid foods identified as triggers, limit simple sugars in favor of complex sugars (Di Vetta et al., 2017).

4. Procedures for recording and reporting adverse events

Any non-serious adverse event, as defined above, observed during the research and its aftermath must be reported in the observation book in the section provided for this purpose. Only one event should be reported per item. The event may correspond to a symptom, a diagnosis or a result of a complementary examination deemed significant. All clinical or paraclinical elements that best describe the corresponding event must be reported.
A form for reporting a serious adverse event, validated for research, and a classification grid for serious and non-serious adverse events will be made available to the persons involved in the research protocol to help them manage adverse events (i.e., to help them differentiate between events according to their seriousness and their expected nature). The grid will be drawn up and validated by all those involved in the research. It may be modified during the course of the research, depending on the reports received by the sponsor.
The sponsor, informed by the intervener, is obliged to notify the Steering Committee immediately of all serious adverse events except those listed in the grid as not requiring immediate notification. For each serious adverse event, the Steering Committee must issue an opinion on the causal link of the event with any experimental element of the research, whether it concerns the procedures performed or the products used. Obtaining information relating to the description and evaluation of an adverse event may not be possible within the time allowed for the initial report. Therefore, the clinical course, as well as the results of any clinical check-ups and diagnostic and/or laboratory examinations, or any other information allowing an adequate analysis of the causal link, will be reported:

- Either on the initial report of the SAE if they are immediately available.
- Or subsequently and as quickly as possible, by sending a new completed SAE report by fax (and specifying that it is a follow-up to a declared SAE and the follow-up number).

All reports made by investigators should identify each subject participating in the research by a unique code number assigned to each subject.
In the event of a notified death of a research subject, the investigator should provide the sponsor with any additional information requested (e.g., hospital report, autopsy results).
Any new fact occurring in the research or in the context of the research, from data in the literature or from ongoing research, must be notified to the sponsor.

5. Reporting of adverse events to the Health Authorities

All suspected serious unexpected adverse events will be reported by the sponsor to the competent authorities within the legal deadlines.
In the event of a serious unexpected adverse reaction due to an experimental element of the research, whether it concerns the procedures performed or the products used, the competent authorities, the Personal Protection Committee and the research investigators must be informed.

6. Follow-up procedures for individuals following the occurrence of adverse events

Any patient presenting an adverse event should be followed up until the event is resolved or stabilized.
If the event is not serious, the progress of the event should be noted on the relevant page of the case report form in the section provided for this purpose.