Data Plan Management (DPM)

GENERAL INFORMATION

IMPROVE study protocol
Title: An interventional single blinded randomized controlled trial to Investigate post-stroke local Muscular vibrations to Promote ceRebral plasticity and functiOnal recovery.
Coordinator: Sophie JULLIAND
Date: 21/11/2023

1. DATA DESCRIPTION AND COLLECTION OR REUSE OF EXISTING DATA

1a. How will new data be collected or generated and/or how will pre-existing data be reused?
The clinical data collected as part of this study are required to carry out the statistical analysis of the results. In accordance with international standards (Clinical Data Interchange Standards Consortium, CDISC), the information contained in the medical record will be entered into a database via the eCRF by authorized and specially trained staff at the investigating center.
Clinical data will be collected from:
- Medical file,
- Standardized evaluations during the protocol,
- Directly from the participant.

1b. What data (e.g. types, formats and volumes) will be collected or produced?

The data collected include:
- Demographic (age, sex)
- Medical (medical history, anthropometric data, drug treatment, clinical examination, stroke characteristics, understanding capacities, etc.)
- Neurophysiological measures at the flexor carpi radialis (H-reflex, M-wave, Motor evoked potential (MEP), EEG)
- Functional measures (Spasticity of the upper limb with the Modified Ashworth Scale and with the Isokinetic Dynamometer, Motor evaluation with the Fugl-Meyer Assessment of Upper Etremity).

Patient data will be pseudonymized, and only an inclusion number will be reported in the eCRF. This consists of the center number, the inclusion rank number and the patient initials (first letter of the surname and first letter of the first name).

2. DOCUMENTATION AND DATA QUALITY

2a. What metadata and documentation (e.g. collection methodology and data organization) will accompany the data?

A user's guide for CleanWeb software will be given to the center staff carrying out the inclusions.
In eCRF, filling aids will be available for certain data.

2b. What data quality control measures will be implemented?

All required information must be entered as and when obtained by a Clinical Study Technician (CST) or the investigator, and an explanation provided for any missing or inconsistent data.
Checks will be scheduled to verify the quality, consistency and completeness of data entered into the eCRF. The list of checks to be implemented will be defined by the data manager in the study's data validation plan. If such data are detected, correction requests will be sent to the participating center via the CleanWeb software. If corrections are necessary, they will be made by the CST or the investigator directly in the software.
A series of queries will be carried out periodically during the course of the project by a data manager, in conjunction with monitoring visits, in order to validate the consistency of all data. These queries will be repeated iteratively until an error-free database is obtained.

3. STORAGE AND BACKUP DURING THE RESEARCH PROCESS

3a. How will data and metadata be stored and backed up throughout the research process?

The study data collected in the CleanWeb software database are hosted in a data center (OVH, ISO/IEC 27001 certified) under the responsibility of TELEMEDICINE TECHNOLOGIES, an ISO 9001 certified company.
TELEMEDICINE has a set of dedicated Virtual Data Centers, of which it is the sole administrator. This infrastructure comprises a primary site and a secondary site, which are geographically separated.
Automatic daily backups of application data (files and databases) are carried out locally on the primary site and on the remote secondary site, in order to meet current regulatory requirements.
These backups are incremental, with a retention period of 5 months.
All data for services hosted by OVH is backed up daily. This includes databases and all operating data (attached documents, configuration files, etc.).
A backup of the CleanWeb server in Dijon is carried out every day on an incremental basis, with a retention period of 5 months. A backup on a remote site is also performed daily.
Backups are incremental, daily, with a retention period of 5 months. The most recent backup is stored in complete form.
These backups are stored in a dedicated VM (Virtual Machine) in the primary DATA CENTRE.
Backup data is then synchronized at a secondary site several kilometers away from the primary site. Transmissions between the primary and secondary sites are encrypted (SSH).
The frozen database extraction file ("csv" format), the source data (“acq” format) from the isokinetic dynamometer and neurophysiological measures, and the EEG source data (“edf” format) will be stored on the CIC-EC and CIC-PIT secure server in a directory with restricted access rights.
The servers are backed up daily on a backup server. The file server also benefits from periodic snapshots, enabling documents that have been deleted several days previously to be quickly restored.

3b. How will data security and the protection of sensitive data be ensured throughout the research process?

Monitoring, backup and business continuity will be ensured by the CleanWeb software publisher. Access to OVH's premises and storage bays is strictly controlled, uninterrupted power supply is guaranteed by inverters, climatic conditions are controlled and a fire safety system is in place. Servers are protected by a firewall that is regularly updated by the OVH data center. Data is managed in strict compliance with confidentiality rules, access is controlled by SSL certificate and all exchanges are encrypted. The database is hosted and maintained by TELEMEDICINE TECHNOLOGIES.
A Standard Operating Procedure (SOP) describes the arrangements for managing access rights to the CleanWeb software. Any person authorized to access data and/or enter data via the eCRF will have

received prior training in the CleanWeb software.
A personal and secure access account (login and password renewed regularly) adapted to the needs of everyone's function will then be created so that he/she can access data and/or enter data.
The 8-character password must contain at least 1 number, 1 lower-case letter and 1 upper-case letter. It must be renewed every 120 days. In addition, access to the account will be temporarily blocked after 3 failed login attempts.
For a logged-in user, CLEANWEB implements automatic disconnection in the event of prolonged non-use. The time can be set, but is generally of the order of 15 minutes. After this time, a return to the authentication window forces the user to reconnect by re-entering his or her access codes.

4. LEGAL AND ETHICAL REQUIREMENTS, CODES OF CONDUCT

4a. If personal data are processed, how will compliance with the provisions of legislation on personal data and data security be ensured?

Study participants' data will be collected only after the participant's oral, free and informed consent has been obtained.
In accordance with current legislation (articles L.1121-3 and R.5121-13 of the French Public Health Code), persons with direct access to source data will take all necessary precautions to ensure the confidentiality of information relating to the persons concerned (in particular, information concerning the identity of participants and the results of the research). These persons are bound by professional secrecy.
During this research, the data collected will be coded (pseudonymized) and will under no circumstances reveal the names of the persons concerned.
The IMPROVE identification code, unique to each participant, is made up according to the following rules:
- 1 digit: center number
- 3 digits: order number for inclusion in the center
- 2 letters: 1st letter of the participant's surname - 1st letter of the first name

The correspondence list between inclusion number and nominative information, which is not computerized, will be kept securely at the center participating in the study.
This study will be carried out in accordance with the French Data Protection Act no. 78-17 of January 6, 1978, as amended, and with the General Regulation on the Protection of Personal Data (RGPD), which was adopted at European level and came into force on May 25, 2018.
Medical and personal data concerning participants, as well as data associated with samples, are going to be processed electronically in order to establish the results of the study, in accordance with the exceptions provided for in Article 9 of the RGPD allowing health data to be processed.
This processing will be confidential, as the data will only be identified by an identification code.
Participants have a number of rights, which they may exercise by submitting a written request to the CHU Dijon Bourgogne Data Protection Officer (DPO): the right to access and rectify their data, the right to limit its processing by computer, the right to object to its transmission, the right to be forgotten (deletion of your data), and the right to lodge a complaint with the CNIL (Commission nationale de l'information et des libertés).

4b. How will other legal issues, such as data ownership or intellectual property rights, be addressed? What legislation applies in this area?

All data collected during the course of this study are the property of the study Sponsor (CHU Dijon-Bourgogne) and may not under any circumstances be communicated to a third party without the written agreement of the study's coordinating investigator (Sophie JULLIAND).
The planning and conduct of this study are governed by French and European laws, law n° 2012-300 of March 5, 2012 relating to research involving the human person modified by order n° 2016-800 of June 16, 2016 and

its implementing decrees). This research may only begin once all legal provisions relating to obligations prior to the implementation of research have been complied with. The study will be conducted in accordance with the ethical principles of the Declaration of Helsinki and the recommendations of Good Clinical Practice.

5. DATA SHARING AND LONG-TERM STORAGE

5a. How and when will data be shared? Are there any restrictions on data sharing or reasons for embargoes?

In line with Good Clinical Practice, after data monitoring, the database will be frozen for final analysis. Data freezing will be carried out in accordance with CIC-EC 1432 procedures.

Statistical analyses will be carried out in collaboration with CIC-EC 1432 biostatisticians. Data will be extracted from the frozen database and transmitted by the data manager (CIC-EC 1432) to the biostatistician (CIC-EC 1432), using a secure channel, on the file server managed by CIC-EC 1432 in directories for which access rights are restricted.
The study team policy is about to share and collaborate with other research teams upon reasonable request for access to study data. Expressions of interest in access to study data, addressed to the corresponding author, will be considered and data de-identified at group or individual level may be shared as appropriate. A data transfer agreement will then be drawn up. The study dataset will be available at the end of the study, once the database is frozen. Sharing the database will be made available between interested parts with a data sharing agreement contract.

If patient data is sent outside CIC-EC 1432, files will be password-protected and exchanged via the University of Burgundy's secure RENATER system.

5b. How the data to be retained, will be selected and where will they be preserved over the long term (e.g. a data warehouse or archive)?

All study data will be kept at CIC-EC 1432 for 15 years after the end of the study. The file containing the data will be read-only protected at the end of the study, on the CIC-EC 1432 server.
An archive containing each patient's data in pdf format will be stored on a DVD at each center.

5c. What methods or software tools will be needed to access and use the data?

The following software will be used for processing:
- CleanWeb (Telemedicine): for secure hosting of eCRF (electronic Case Report Form) data;
- SAS (SAS Institute): for data management.
- R: for statistical analysis

5d. How will a unique, permanent identifier (such as the DOI) be assigned to each dataset?

Item not applicable. No unique, permanent identifier is assigned to a dataset.

6. DATA MANAGEMENT RESPONSIBILITIES AND RESOURCES

Data will be managed anonymously and securely by the coordinating center (INSERM CIC 1432 - Clinical

Epidemiology Module), in compliance with the French Data Protection Act.
For the duration of the research and at its conclusion, data collected on research subjects and transmitted to the promoter by the investigators (or any other specialist) will be rendered anonymous.