Management of the specialised biobank CRYO-LEA using the MBioLIMS BioBanking® System

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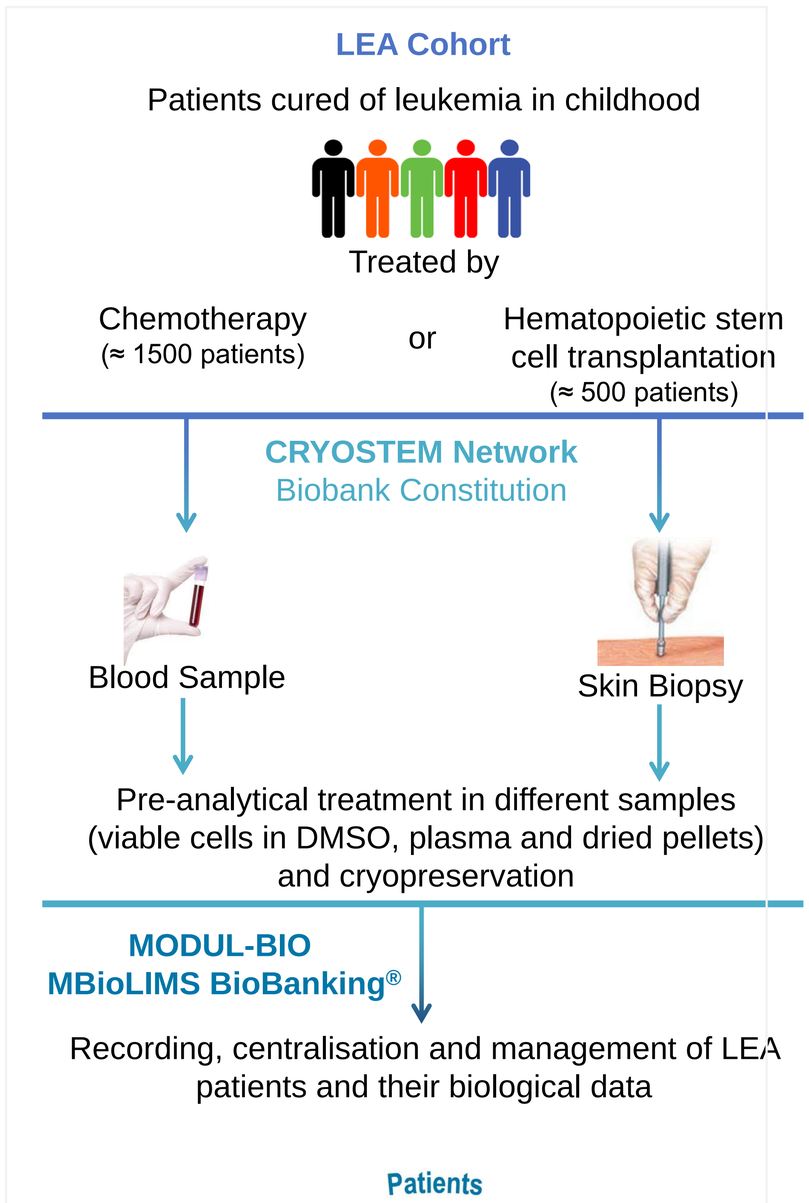
INTRODUCTION

Survival rate of childhood leukemia has improved considerably but the increased number of long-term survivors is now attended by a growing awareness that many will develop health conditions as a direct consequence of their treatments.
A first step for developing an accurate strategy to reduce these long-term side effects (metabolic syndrome, cardiomyopathy, secondary tumors, osteonecrosis..) requires identification of their incidence and clinically detectable risk factors at a genetic level.
Since July 2018, a new specific biobank, named CRYO-LEA, has emerged, including patients treated in the childhood for a leukemia by chemotherapy or Hematopoietic Stem Cell Transplantation (HSCT).

CRYO-LEA: a unique biobank dedicated to leukemia treatments long-term effects

The French LEA (Leukemia of Children and Adolescents) cohort has been initiated in 2004 to evaluate prospectively long-term health status of childhood leukemia survivors treated after 1980. Briefly, clinical and quality of life data are collected during specific medical visits at pre-defined dates, beginning one year after completion of treatments and repeatedly thereafter.
However, to enable gene exploration of these long-term effects, a first crucial step was to constitute an adequate biological collection associated with the LEA database.
Since 2018, CRYOSTEM, the unique European ISO 9001-certified expert in biobanking networks in the field of HSCT, has put its knowledge to the benefit of LEA cohort to build its biological collection aiming at enabling further genetic studies to predict long-term effects of chemotherapy and HSCT to treat leukemia.

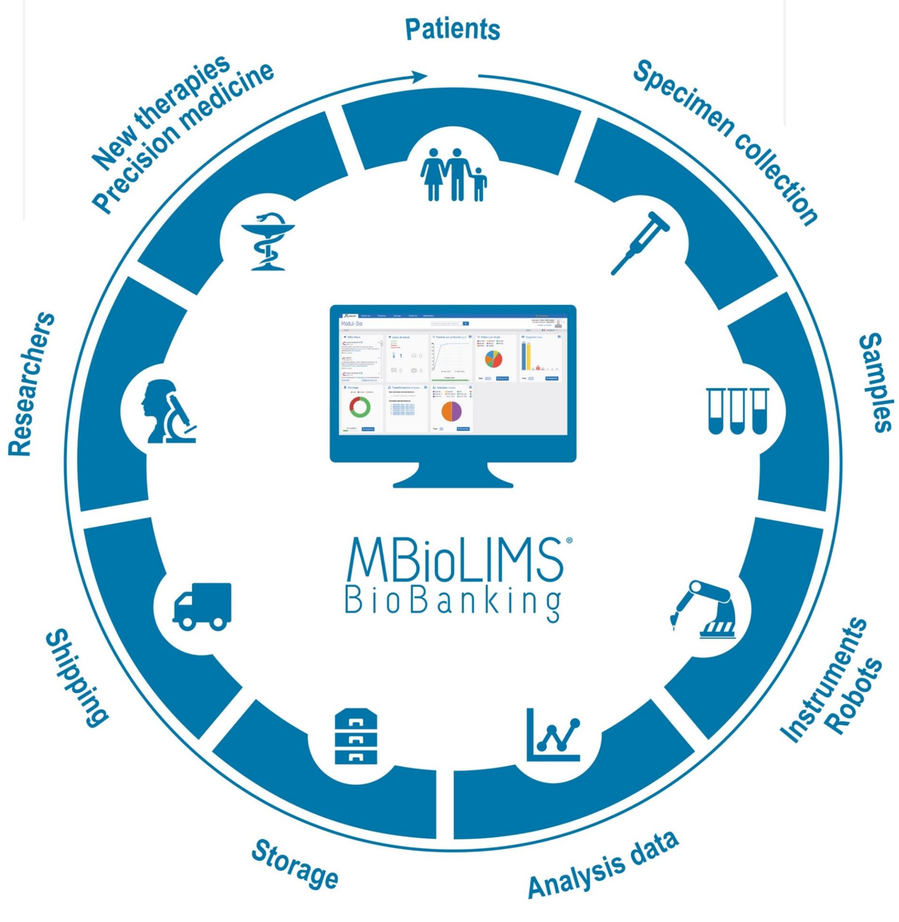


MBioLIMS BioBanking®, a complete management system of biological data for CRYO-LEA

Modul-Bio has provided the solution MBioLIMS to manage and centralise patients and samples information to facilitate this biobank and further studies into genetic susceptibility.
Considering that the software has been tailored to the specific needs of CRYO-LEA and its objectives, the MBioLIMS BioBanking software benefits are measured at different levels :

- Management of the functioning of the 23 centres biobanking network as a unique one ;
- Secure storage and centralisation of biological data with restricted access ;
- Scalability to the type of samples according to the therapies used to treat leukemia
- Independent work and recording of included patients, collected samples and data ;
- Supervising functionality to administer and analyse the data from all sites which provides a powerful centralised source of information that can be interrogated and reported on to provide any specific information as required ;
- Accelerated training of the users in clinical services and Biological Resources Centres ;
- Management of the consent and samples provision regarding the consent status in line with the new European privacy regulation GDPR.

MBioLIMS ensures an auditable and automated sample life cycle history maintaining the custody and status of biological material as it is processed and researched.



CONCLUSION

MBioLIMS BioBanking has enabled in an efficient way the constitution and the management of the specific area biobank CRYO-LEA. To date, 1 350 patients have been included in CRYO-LEA protocol in almost 2 years. The software manages samples derived from both blood and skin biopsies samples, corresponding to 11 350 samples. Moreover the software also facilitates the samples provision thanks to its dedicated module.

Modul-Bio ensures a major role by deploying a functional BIMS Biobank Information Management System, tailored to the biobank specificities, centralizing a large number of samples and data, further used in genome-wide studies to identify genetic factors behind late side effects.

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