

Survivorship to lymphoma and quality of life Team

Work Program

The team intends to carry out clinical and translational research activities already ongoing since 2016 on survivorship to lymphoma and quality of life in hematologic neoplasms. The team is composed by experts belonging to multiple disciplines with the aim of covering the multiple aspects of long-term survivorship. Worldwide in 2020, 83,087 diagnoses of lymphoma were estimated, in Italy there were 2,120 new cases of Hodgkin lymphoma (HL) and 6,170 non-Hodgkin's lymphoma (NHL), for which overall 5-year survival rates are calculated above 80% and are in constant improvement. It should be emphasized that HL affects individuals in the II-III decade of life with possible late sequelae to treatments leading a great impact on the quality of life, like cardiotoxicity, second cancers, infertility, metabolic syndrome, states of anxiety and depression.

The team operates within national cooperative groups: since 2018 within the "Survivorship, comorbidities and quality of life" committee of the Italian Lymphoma Foundation (FIL, Fondazione Italiana Linfomi) and from 2021 as part of the working group "Survivorship care" of Alleanza Contro il Cancro (ACC).

Within the IRCCS, starting from the Ricerca Corrente project 2018/2020 "Fertility prevention and assessment of at-risk lifestyles in patients diagnosed with lymphoma (del. 68/2019)" (Line 4 of the Ministry of Health - "Cancer and quality of life: from prevention, to supportive and complementary therapies, to monitoring long survival ") some studies have been conducted to evaluate the metabolic status of patients treated for lymphoma, fertility aspects, psychological analysis, the impact of physical activity. The Ricerca Corrente project led also to gain experience in the field of ovarian tissue cryopreservation for experimental purposes, providing the bases for the start up of this activity within the IRCCS.

Starting from the experiences gained in recent years, the working team proposes the following objectives:

- a) validation of predictive biomarkers of long-term survivorship in lymphoma;
- b) validation of biomarkers predicting long-term toxicity secondary to anti-tumor treatments for lymphoma and chronic lymphocytic leukemia;
- c) validation of Survivorship Care Plan (SCP) as a tool for tertiary prevention, early diagnosis of treatment toxicities and OS;
- d) improvement of healthy lifestyles of patients with lymphoma both in treatment and in the remission phase;
- e) assessments on the improvement of various aspects of the quality of life of patients with lymphoma and chronic lymphocytic leukemia both in treatment and in the remission phase.

Team composition

Team Leader

Carla Minoia, MD PhD –Hematology Unit IRCCS

Team members

Tetiana Skrypets, Giacomo Loseto, Maria Stella De Candia, Paolo Di Tonno, Sabino Ciavarella (SC Ematologia);

Erica Silvestris, Giuseppe De Palma, Antonio Negri (UOSD clinicizzata Ginecologia, Biobanca, Laboratorio caratterizzazione cellulare per aspetti inerenti la fertilità);

Francesca Romito (UO Psicologia);

Antonella Daniele (U.O oncologia ad indirizzo sperimentale e gestione Biobanca- Ambulatorio Clinica di Nutrizione);

Agata Puzzovivo (UO Cardiologia per gli aspetti di cardiotoxicità e prevenzione);

Fabio Pavone, Felice Clemente (Study coordinators);

Gian Maria Zaccaria (UO UTT per l'implementazione tecnologica del progetto).

Team networks

- Survivorship, comorbidities, and quality of life" committee of the Italian Lymphoma Foundation (FIL, Fondazione Italiana Linfomi)
- Working group "Survivorship" of Alleanza contro il Cancro (ACC).
- SC di Medicina Nucleare Università degli Studi Aldo Moro di Bari dr. Cristina Ferrari; SC di Radiodiagnostica Università degli Studi Aldo Moro di Bari dr. Nicola Maggialetti.
- Laboratorio di scienze motorie e sportive; Corso di Studio in Scienze e Tecniche dello Sport. Università degli Studi Aldo Moro di Bari: prof. Francesco Fischetti, dr. Stefania Cataldi, dr. Luca Poli.
- SC Malattie Infettive del Policlinico di Bari / Università degli Studi Aldo Moro: dr. Davide Bavaro e dr. Lucia Diella.

Key fundings

- The FIL multicenter Survivorship Care Plan (SCP) validation project was funded by national AIL and BCC Banca di Credito Cooperativo di Castellana Grotte (BA).
- The team leader is sub-investigatori of PNRR-MAD-2022-12376441entitled "Leukemic cell and microenvironment interactions as the culprit of chronicity in CLL" submitted for PNRR funding in July 2022.
- The team leader is PI of the following Ricerca Corrente projects funded by the Ministry of Health 2022:
 - ✓ Validation of biomarkers of long-term survivorship to lymphoma and application of Survivorship Care Plan as a tertiary prevention tool.
 - ✓ Improvement of the path of the onco-haematologic patient enrolled in clinical trials and technological implementation of processes.

Key publications

- **Management of lymphoma survivor patients in Italy: an evaluation by Fondazione Italiana Linfomi (FIL).**
Minoia C, Bari A, Nassi L, Banzi R, Gerardi C, Lenti V, Calabrese M, Spina M, Guarini A. Tumori. 2021 Feb;107(1):91-94. doi: 10.1177/0300891620905649. Epub 2020 Mar 2.
- **Fertility preservation strategies for patients with lymphoma: a real-world practice survey among the Fondazione Italiana Linfomi centers.**
Viviani S, Dellino M, Ramadan S, Pracchio C, Marcheselli L, Minoia C, Guarini A on behalf of the FIL Lymphoma Survivorship Committee. Tumori journal 2021. <https://doi.org/10.1177/03008916211040556>.
- **Long-Term Follow-Up of Classical Hodgkin Lymphoma and Diffuse Large B-Cell Lymphoma Survivors: Aims and Methodological Approach for Fondazione Italiana Linfomi Systematic Reviews.**
Gerardi C, Allocati A, Minoia C, Guarini A, Banzi R. Cancers 2021, 13(12), 2976; <https://doi.org/10.3390/cancers13122976>.
- **Male and female fertility: Prevention and monitoring hodgkin' lymphoma and diffuse large b-cell lymphoma adult survivors. a systematic review by the fondazione italiana linfomi.**
Viviani S, Caccavari V, Gerardi C, Ramadan S, Allocati E, Minoia C, Guarini A, Di Russo A. Cancers 2021, 13(12), 2881; <https://doi.org/10.3390/cancers13122881>.
- **Healthy Lifestyles on Late Sequelae in Classical Hodgkin Lymphoma and Diffuse Large B-Cell Lymphoma Survivors. A Systematic Review by the Fondazione Italiana Linfomi.**
Minoia C, Gerardi C, Allocati E, Daniele A, De Sanctis V, Bari A and Guarini A. The Impact of Cancers 2021, 13(13), 3135; <https://doi.org/10.3390/cancers13133135>

- **Late Neurological and Cognitive Sequelae and Long-Term Monitoring of Classical Hodgkin Lymphoma and Diffuse Large B-Cell Lymphoma Survivors: A Systematic Review by the Fondazione Italiana Linfomi.**
Franceschetti S, Annunziata MA, Agostinelli G, Gerardi C, Allocati E, Minoia C, Guarini A. *Cancers (Basel)*. 2021 Jul 7;13(14):3401. doi: 10.3390/cancers13143401.
- **Late cardiological sequelae and long-term monitoring in classical Hodgkin lymphoma and Diffuse large B-cell lymphoma survivors. A systematic review by the Fondazione Italiana Linfomi.**
Oliva S, Puzzovivo A, Gerardi C, Allocati E, De Sanctis V, Minoia C, Tetiana S, Guarini A, Gini G. *Cancers* 2022, 14(1), 61; <https://doi.org/10.3390/cancers14010061>.
- **Second cancers in classical Hodgkin lymphoma and Diffuse large B-cell lymphoma survivors. A systematic review by the Fondazione Italiana Linfomi.**
Nassi L, De Sanctis V, Loseto G, Gerardi G, Allocati E, Ciavarella S, Minoia C, Guarini A, Bari A. *Cancers* 2022, *Cancers* 2022, 14(3), 519; <https://doi.org/10.3390/cancers14030519>
- **Late Endocrine and Metabolic Sequelae and Long-Term Monitoring of Classical Hodgkin Lymphoma and Diffuse Large B-cell Lymphoma Survivors: A Systematic Review by the Fondazione Italiana Linfomi.**
Di Molfetta S, Daniele A, Gerardi C, Allocati E, Minoia C, Loseto G, Giorgino F, Guarini A, De Sanctis V. *Cancers*, *Cancers* 2022, 14(6), 1439; <https://doi.org/10.3390/cancers14061439>.
- **on behalf of the Alliance Against Cancer (ACC) Survivorship Care and Nutritional Support Working Group. Cancer cure and consequences on survivorship care: Position paper from the Italian Alliance Against cancer (ACC) Survivorship care working group.**
Dal Maso L, Santoro A, Iannelli E, De Paoli P, Minoia C, Pinto M, Bertuzzi AF, Serraino D, De Angelis R, Trama A, Haupt R, Pravettoni G, Perrone M, De Lorenzo F, Tralongo P. *Cancer Management and Research*, in press.
- **Body Composition Change, Unhealthy Lifestyles and Steroid Treatment as Predictor of Metabolic Risk in Non-Hodgkin's Lymphoma Survivors.**
Daniele A, Guarini A, De Summa S, Dellino M, Lerario G, Ciavarella S, Ditunno P, Paradiso AV, Divella R, Casamassima P, Savino E, Carbonara MD, Minoia C. *Journal of Personalized Medicine* 2021, 11(3), 215; <https://doi.org/10.3390/jpm11030215>
- **Novel aspects on gonadotoxicity and fertility preservation in lymphoproliferative neoplasms.** Silvestris E, Cormio G, Skrypets T, Dellino M, Paradiso A, Guarini A, Minoia C. *Crit Rev Oncol Hematol*. 2020 Jul;151:102981. doi: 10.1016/j.critrevonc.2020.102981.
- **Fertility Preservation in Cancer Patients During the Coronavirus (COVID-19) Pandemic.** Dellino M, Minoia C, Paradiso AV, De Palo R, Silvestris E. *Front Oncol*. 2020 Jun 4;10:1009. doi: 10.3389/fonc.2020.01009.
- **Psychological distress in outpatients with lymphoma during the COVID-19 pandemic.** Romito F, Dellino M, Loseto G, Opinto G, Silvestris E, Cormio C, Guarini A, Minoia C. *Front Oncol*. 2020 Jul 10;10:1270. doi: 10.3389/fonc.2020.01270.
- **Effects of a physical exercise intervention program on psychological and physiological variables in cancer patients.**
Fischetti F, Greco G, Cataldi S, Minoia C, Loseto G, Guarini A. *Medicina (Kaunas)*. 2019 Jul 16;55(7). pii: E379. doi: 10.3390/medicina55070379.
- **Ovarian Stem Cells (OSCs) from the Cryopreserved Ovarian Cortex: A Potential for Neo-Oogenesis in Women with Cancer-Treatment Related Infertility: A Case Report and a Review of Literature.**
Silvestris E, Minoia C, Guarini A, Opinto G, Negri A, Dellino M, Tinelli R, G. Cormio, Paradiso AV, De Palma G.. *Curr. Issues Mol. Biol.* 2022, 2, 2309–2320. <https://doi.org/10.3390/cimb44050157>.