

**STAGE I GONADAL GERM CELL TUMORS (GGCT): OUTCOME AFTER THE SURVEILLANCE STRATEGY AS APPLIED IN THE ASSOCIAZIONE ITALIANA EMATOLOGIA ONCOLOGIA PEDIATRICA (AIEOP) 2004 PROTOCOL**

**Monica Terenziani<sup>1</sup>, Paolo D'Angelo<sup>2</sup>, Gianni Bisogno<sup>3</sup>, Renata Boldrini<sup>4</sup>, Giovanni Cecchetto<sup>5</sup>, Paola Collini<sup>6</sup>, Massimo Conte<sup>7</sup>, Maria Debora de Pasquale<sup>8</sup>, Paolo Indolfi<sup>9</sup>, Alessandro Inserra<sup>10</sup>, Luigi Piva<sup>11</sup>, Fortunato Siracusa<sup>12</sup>, Filippo Spreafico<sup>1</sup>**

<sup>1</sup>*Pediatric Oncology Unit, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy;* <sup>2</sup>*Pediatric Hematology and Oncology Unit, A.R.N.A.S. Ospedale Civico Palermo, G. Di Cristina Children's Hospital, Palermo, Italy;* <sup>3</sup>*Division of Pediatric Hematology and Oncology, Padova University, Padova, Italy;* <sup>4</sup>*Department of Pathology, Bambino Gesù Research Institute, Roma, Italy;* <sup>5</sup>*Department of Pediatrics, Division of Pediatric Surgery, University of Padua, Padova, Italy;* <sup>6</sup>*Department of Pathology, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy;* <sup>7</sup>*Division of Pediatric Oncology, IRCCS Istituto Giannina Gaslini, Genova, Italy;* <sup>8</sup>*Department of Pediatric Hematology and Oncology, Bambino Gesù Research Institute, Roma, Italy;* <sup>9</sup>*Pediatric Oncology Unit, Pediatric Department II, University of Napoli, Napoli, Italy;* <sup>10</sup>*Pediatric Surgery Unit, Bambino Gesù Research Institute, Roma, Italy;* <sup>11</sup>*Pediatric Surgery Unit, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy;* <sup>12</sup>*Pediatric Department, University of Palermo, Palermo, Italy*

**Purpose:** Surveillance strategy is a standard option in stage I testicular GCT and suggested for ovarian GCT too. Worries regarding the relapse risk in ovarian are emerging. We here report on our series of stage I GGCT.

**Methods:** All histology types but pure teratoma were included; eligible patients had no evidence of disease and normal serum  $\alpha$ FP and  $\beta$ HCG after surgery. Not all patients enrolled were operated according to protocol guidelines, but protocol was aimed at assessing efficacy according to intent-to-treat principle. The follow up program included evaluation every 2 and 3 months (first and second year), then every 6 months until fifth year.

**Results:** 28 testicular (median age 14 yrs), 21 ovarian (median age 11 yrs) stage I GCT were registered. At the median follow-up of 40 months, 4-yrs OS and RFS were 100% and 84%, respectively. Among testicular tumors we observed 10 yolk sac tumor (YST), 4 YST plus teratoma, 14 mixed histologies. Their RFS was 86%; 4 patients relapsed (2–9 months from orchiectomy) and all achieved complete remission (CR) after cisplatin based chemotherapy  $\pm$  surgery. All relapsed patients are alive: one boy suffered second relapse and a second CR was documented. Ovarian tumors: 9 dysgerminoma, 9 teratoma plus YST, 1 YST, 2 mixed histologies. The RFS was 81%: 4 patients relapsed (2–24 months from surgery), all of them are alive, 3 in first and one in second CR. In 3/4 relapsing cases, surgical guidelines were not applied: lymph node sampling a/o peritoneal washing missing.

**Conclusion:** We confirm the excellent survival for stage I GGCT without adjuvant chemotherapy, due to the high cure rate of relapsed patients. Noteworthy 84% of the cases were spared chemotherapy. Complete adherence to surgical guidelines in ovarian tumors still remains critica