

## Iranian Oncologists' Attitude towards Fertility Preservation in a Sample Group

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### Abstract

**Background:** Recent advances in cancer treatment have resulted in an increased number of cancer survivors. Fertility might be impaired by cancer itself or through gonadal damage as a consequence of radio-chemotherapy. Damages to reproductive organs are seen in minimally upto 30% of cancer patients. The aim of the present study was evaluate the attitude of Iranian oncologists toward fertility preservation.

**Methods:** Thirty oncologists filled an author-designed questionnaire which included five multiple choice questions at Mahak hospital, Tehran in 2009. The data were collected and analyzed by SPSS 11.5 software.

**Results:** More than half of the oncologists believed that radio-chemotherapy has destructive effects on reproductive organs. This study showed that as high as 67% of the respondents believed fertility preservation should be offered to all patients at risk, but 40% of them insisted that the patients should bring up the topic themselves. Only 46% of the oncologist knew about fertility preservation techniques. The greatest barriers for accepting fertility preservation by the parents of children undergoing cancer treatment were: lack of information (41%), hopelessness from treatment prognosis (33%), fear of delay in starting the treatment (15%) and the priority of child survival (11%).

**Conclusion:** The specific challenges of counseling are time pressure between diagnosis and start of treatment, little knowledge about fertility preservation both by treating oncologists and parents; therefore a team consisting of oncologists, infertility specialists and social workers is recommended in these settings.

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**R**ecent advances in cancer treatment have resulted in an increased number of long-term cancer survivors (1). Currently, the 5-year survival of childhood cancers lies between 75-80% (2) and the cure rate for certain malignancies may exceed 90% (3). Estimates suggest that by 2010, about one in every 250 people will be a survivor of childhood cancer (4). Depending on the type of cancer, fertility might be impaired by the disease itself, or through gonadal damage as a consequence of aggressive radio-chemotherapy regimens, as well as bone marrow transplantations

### Background

(5). The resulting infertility might be temporary or permanent.

For all pre pubertal children affected by cancers that could impair their fertility, strategies to preserve their fertility and the ability to bear their own children may be of utmost importance (6). All the concerned parties, patients as well as their families and the medical staff who are responsible for their care, are confronted with this unique and challenging situation that demands special consideration and research with regard to its psychological impacts and consequences (7). Guidelines

on fertility preservation underline the importance of informing the affected patients about the possible fertility impairment due to cancer treatment and the available options to preserve it (8). The percentage of patients recalling counseling about the impact of cancer treatment on fertility ranges from 34-72% (9).

The aim of the present article is to evaluate a group of Iranian oncologists' attitude toward fertility preservation.

**Methods**

This research is based on an attitude assessment questionnaire. An author-designed questionnaire with 5 items was prepared by a team consisting of an oncologist, a psychiatrist, an andrologist and a psychologist. The questionnaire was filled by five specialists in a pilot study and its validity was approved by the expert team. For its reliability, the data were analyzed and Cronbach's alpha was calculated (0.72). The study group consisted of pediatric oncologists, hematologists, radiotherapist and other child cancer therapists in child cancer centers in Tehran: Mahak, Aliasghar, Tebbi Koodakan and Shohada hospitals.

The questions were as they follow:

Q1: How much damage to reproductive organ is due to radio-chemotherapy?

Q2: How much are you concerned about fertility preservation in the pre-treatment stage?

Q3: Have you ever given consultation to the patients' parents about fertility preservation?

Q4: Does fertility preservation make you hesitate about the start of cancer treatment?

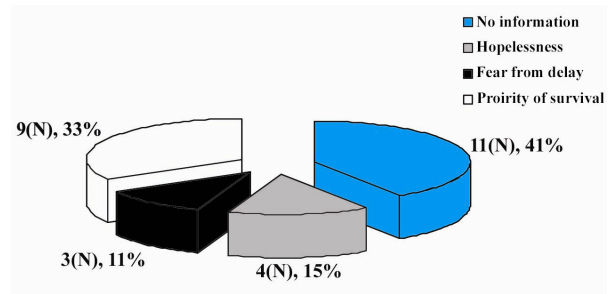
Q5: How much do you know about ART (Assisted Reproductive Techniques)?

We asked the participants some other questions regarding their specialty, experience, and also the greatest barriers regarding the patients' parents about the acceptance of fertility preservation.

We sent the questionnaires to the aforesaid specialists by mail and asked them to answer the questions honestly and send them back. We committed ourselves to keeping the gathered information confidential. The data were analyzed by SPSS 11.5 software.

**Results**

Thirty specialists replied, the response rate being 75%. 85% of the respondents were oncologist and 15% were from other specialties involved



**Figure 1.** The greatest barriers to the acceptance of fertility preservation by parents of children with cancer

in cancer treatment. More than half of the oncologists were pediatric oncologists. More than half of the oncologists believed that radio-chemotherapy had destructive effects on reproductive organs.

67% of the respondents reported that they were attentive about the damaging effects of radio-chemotherapy on fertility at the time of diagnosis.

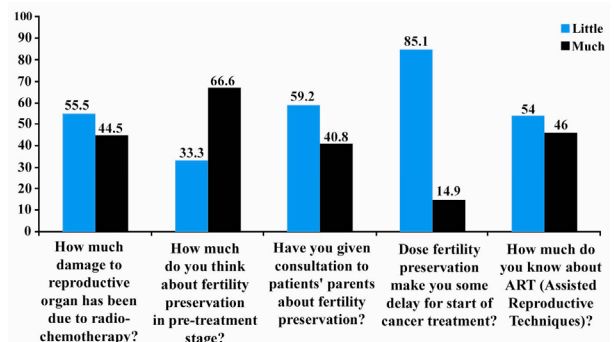
The important reason preventing the parents of children with cancer not to attend fertility preservation programs before cancer treatment, are shown in Figure 1.

A minority of the respondents (15%) had started treatment after referring more than 50% of their patients to fertility preservation centers.

Only 46% of oncologists knew about fertility preservation techniques such as intracytoplasmic sperm injection (ICSI). This study showed lack of knowledge and attitudes regarding fertility preservation in a number of Iranian oncologists. The results from questions 1 to 5 have been categorized by "little" and "much" and shown in Figure 2.

**Discussion**

The study conducted by Shover et al. showed that as high as 91% of oncologists believed that fertility preservation should be offered to all patients at risk, but only 48% of them brought up



**Figure 2.** The results from Q1, Q2, Q3, Q4 and Q5 categorized by "little" and "much".

the topic and less than 25% never mentioned it (10). In our study, although the oncologists believed that radio-chemotherapy had a 30% damage rate on the reproductive organs, but as many as 67% believed that the offer should be made to all patients, but only 40% of them recalled counselling patients on the subject (11).

In a study composed of 657 breast cancer survivors, 72% of women reported that they had discussed fertility concerns with a doctor and 17% had discussed the issue with a fertility specialist (12). Half of the women felt that their concerns about fertility were adequately addressed but a substantial minority of women (20%) reported that their concerns had not been adequately addressed at the time of diagnosis (13). In our study, only 15% of the oncologists had delayed the treatment to refer the patients to fertility preservation centers.

A cross-sectional study by Duffy et Al. on 107 patients undergoing chemotherapy for breast cancer showed a low odds ratio for counseling with more advanced age and higher anxiety levels (14). In a study by Zapalka et al., only 26% of oncologists knew about intracytoplasmic sperm injection (ICSI). In our study, 46% of the oncologists knew about infertility preservation techniques such as ICSI. The study which was carried out by Goodwin et al. and assessed pediatric health professionals' knowledge about advanced fertility preservation showed lack of knowledge and attitude on the issue. Moreover, there were limited interdisciplinary interchange, for example with infertility specialists, and 64.3% reported difficulties with regard to access to such centers. Most parents (85.7%) and more than half of the patients (57.2%) had been concerned about fertility impairment and broached the subject themselves. Similarly, a qualitative study on pediatric oncologists revealed lack of knowledge on fertility preservation resources as a major barrier to discussion (6).

### Conclusion

As counselling has to be offered within a short period of time between the diagnosis of cancer and its treatment, time pressure may affect decisions on treatment strategies. The patients who are already concerned about the disease once again have to make an additional decision about fertility

preservation. This moment is described as a life crisis and considerable challenge by most parents and patients.

In conclusion, counselling seems to be far from being offered globally to all patients and providing information seems to be selective. Therefore, a team composed of an oncologist, an infertility specialist, a psychologist and a social worker is recommended for these settings.

### References

1. Donnez J, Dolmans MM, Demylle D, Jadoul P, Pirard C, Squifflet J, et al. Livebirth after orthotopic transplantation of cryopreserved ovarian tissue. *Lancet*. 2004;364(9443):1405-10.
2. Wallace WH, Anderson RA, Irvine DS. Fertility preservation for young patients with cancer: who is at risk and what can be offered? *Lancet Oncol*. 2005;6(4):209-18.
3. Jemal A, Clegg LX, Ward E, Ries LA, Wu X, Jamison PM, et al. Annual report to the nation on the status of cancer, 1975-2001, with a special feature regarding survival. *Cancer*. 2004;101(1):3-27.
4. Maltaris T, Boehm D, Dittrich R, Seufert R, Koelbl H. Reproduction beyond cancer: a message of hope for young women. *Gynecol Oncol*. 2006;103(3):1109-21.
5. Blatt J. Pregnancy outcome in long-term survivors of childhood cancer. *Med Pediatr Oncol*. 1999;33(1):29-33.
6. Tschudin S, Bitzer J. Psychological aspects of fertility preservation in men and women affected by cancer and other life-threatening diseases. *Hum Reprod Update*. 2009;15(5):587-97.
7. Davis VJ. Female gamete preservation. *Cancer*. 2006;107(7 Suppl):1690-4.
8. Practice Committee of the American Society for Reproductive Medicine. Ovarian tissue and oocyte cryopreservation. *Fertil Steril*. 2004;82(4):993-8.
9. Lee SJ, Schover LR, Partridge AH, Patrizio P, Wallace WH, Hagerty K, et al. American Society of Clinical Oncology recommendations on fertility preservation in cancer patients. *J Clin Oncol*. 2006;24(18):2917-31.
10. Schover LR, Brey K, Lichtin A, Lipshultz LI, Jeha S. Knowledge and experience regarding cancer, infertility, and sperm banking in younger male survivors. *J Clin Oncol*. 2002;20(7):1880-9.
11. Zapalka DM, Redmon JB, Pryor JL. A survey of oncologists regarding sperm cryopreservation and

- assisted reproductive techniques for male cancer patients. *Cancer*. 1999;86(9):1812-7.
12. Partridge AH, Gelber S, Peppercorn J, Sampson E, Knudsen K, Laufer M, et al. Web-based survey of fertility issues in young women with breast cancer. *J Clin Oncol*. 2004;22(20):4174-83.
  13. Thewes B, Meiser B, Taylor A, Phillips KA, Pendlebury S, Capp A, et al. Fertility- and menopause-related information needs of younger women with a diagnosis of early breast cancer. *J Clin Oncol*. 2005;23(22):5155-65.
  14. Duffy CM, Allen SM, Clark MA. Discussions regarding reproductive health for young women with breast cancer undergoing chemotherapy. *J Clin Oncol*. 2005;23(4):766-73.
  15. Goodwin T, Elizabeth Oosterhuis B, Kiernan M, Hudson MM, Dahl GV. Attitudes and practices of pediatric oncology providers regarding fertility issues. *Pediatr Blood Cancer*. 2007;48(1):80-5.