

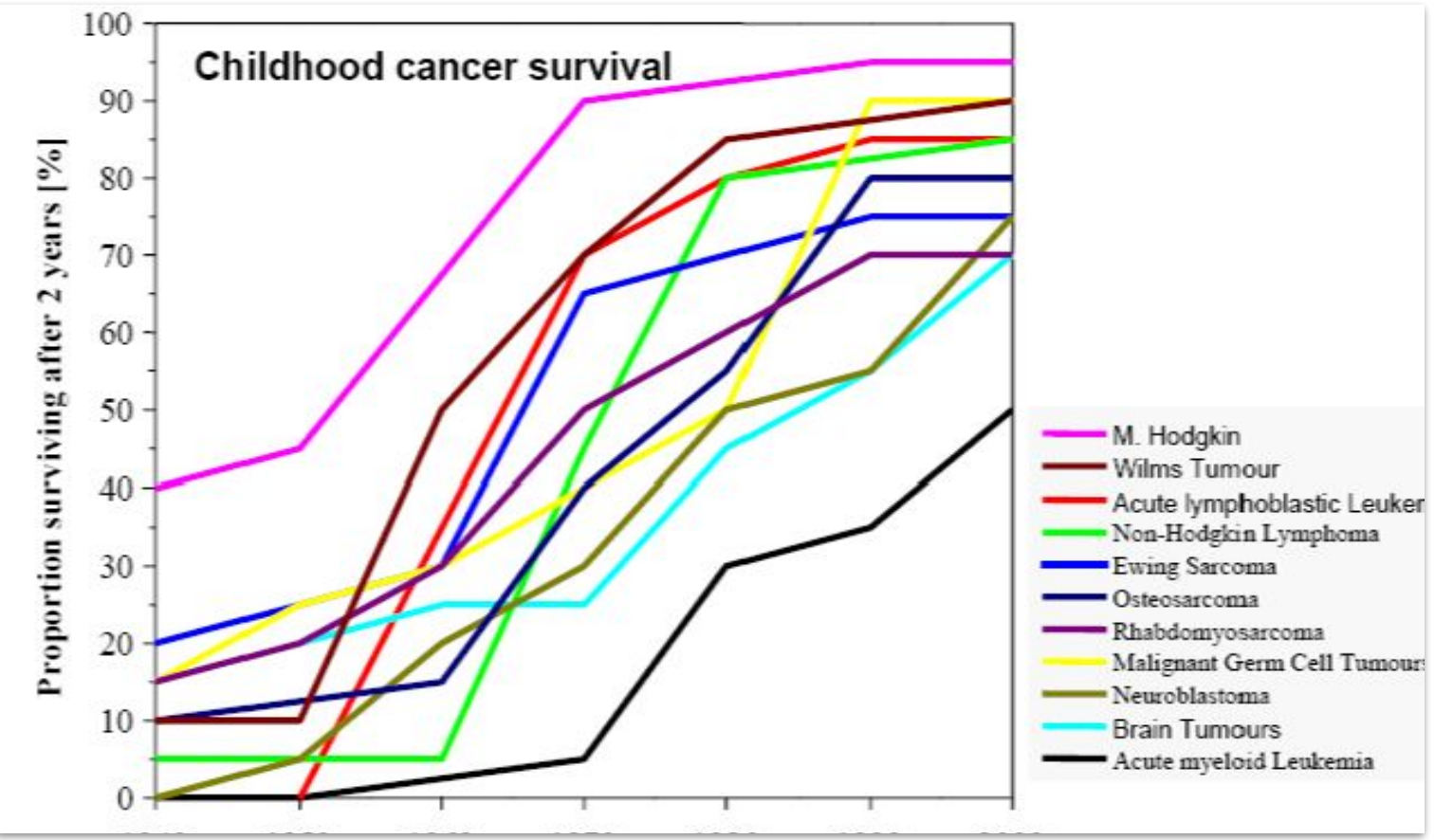
Fertility preservation assessment and management prior to gonadotoxic treatment

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BACKGROUND

Approximately 10% of cancers occur within women of reproductive age. The majority of these women are now treated with curative intent⁽¹⁾. Survival rates have been steadily improving since the 1970s as the effectiveness of our treatments in achieving long term remission improves.

As the incidence of malignancy rises and mortality falls, the number of long term cancer 'survivors' is growing; the total of UK cancer survivors is expected to increase by 3% per year⁽²⁾.



FERTILITY IMPLICATIONS OF ONCOLOGICAL TREATMENTS

Cancer and the treatment required can affect the reproductive system both anatomically and hormonally. In some, primary hypogonadism will result from oophorectomy whereas in many others it is due to toxic radiotherapy and/or chemotherapy. As the ovary is chemosensitive, treatment with either single agent or multi-agent chemotherapy may result in loss of both primordial follicles and growing follicles thereby leading to loss of hormone production, menstruation and possible premature ovarian failure. Gonadal radiotherapy has a similar risk profile for hormonal function and infertility.

The need for effective communication regarding consequences of cancer treatment for fertility together with being able to provide timely fertility preservation treatment such as controlled ovarian stimulation and oocyte vitrification has become increasingly recognised over the last few years.

Ensuring discussion and treatment is able to be provided to these patient within the time constraints of their oncological treatment can be challenging however and this patient group therefore needs special consideration for prioritisation in clinical activity.

AIMS

To assess how well our unit is able to accommodate urgent referrals for fertility preservation through providing timely reviews and fertility preservation treatment thereafter.

METHODS

An audit was undertaken of patients referred to our fertility unit for fertility preservation prior to commencing potentially gonadotoxic therapy. Electronic records covering a one year period from December 2019 to December 2020 were reviewed retrospectively to assess the timescale for fertility clinic review following initial referral, time until commencement of fertility preservation treatment and outcomes of management.

RESULTS

27 women wishing fertility preservation prior to gonadotoxic therapy were identified in the search. 26 were oncology patients and the other one had aplastic anaemia. The majority of patients referred had either a diagnosis of breast or a haematological cancer as demonstrated in the chart below. One patient subsequently opted not to proceed with fertility preservation.

The average age of the patients was 29 (range 19 to 43).

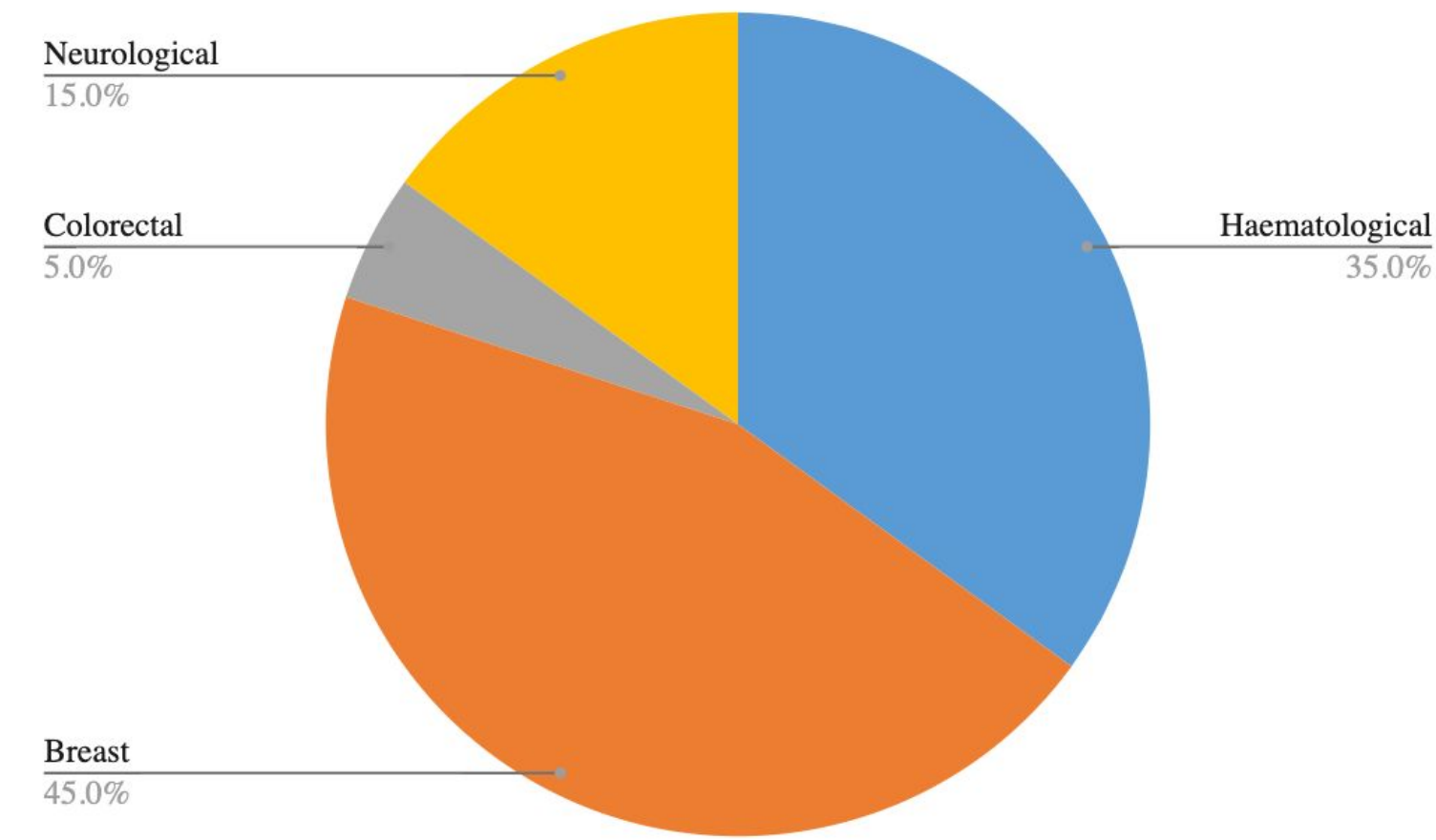


Figure 2. Chart demonstrating the cancer types accounting for the patients referred on for fertility preservation discussion

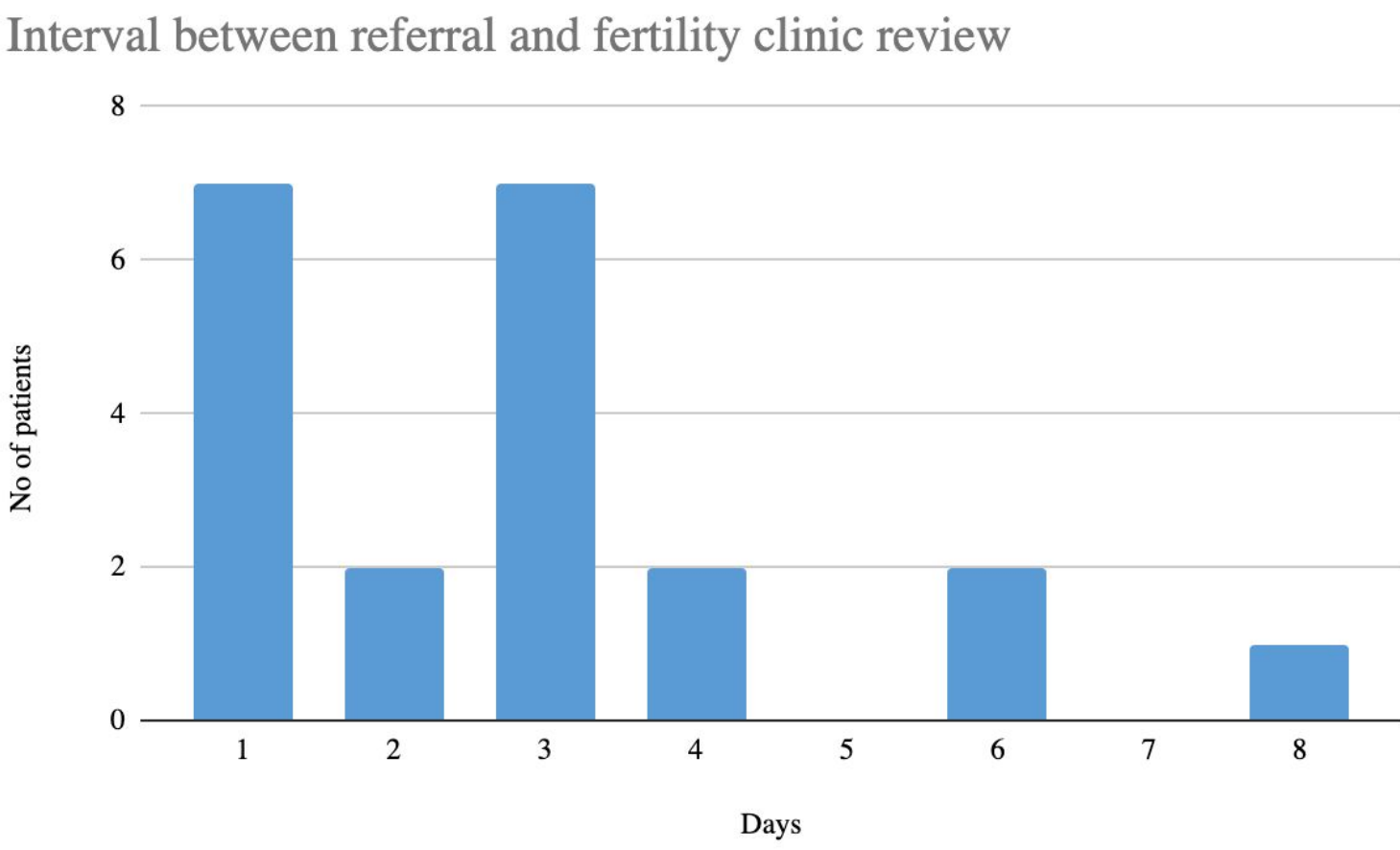


Figure 3. Graph demonstrating the number of days between the date of referral to our fertility service and date of fertility clinic review

Of these patients, only 3 (14%) already had one child with the rest of the women being nulliparous. The average length of wait for fertility preservation assessment was 3 days from the date of referral (*figure 3*).

19 women proceeded with fertility treatment in our unit. The average time until commencement of treatment was 11 days (range 1 - 34) with 50% of patients commencing ovarian stimulation within one week of review.

The average length of time from fertility assessment until treatment was completed via oocyte retrieval was 24 days (range 13 - 53 days). (*figure 4*). Due to medical reasons and to ensure safety, ovarian stimulation had to be delayed for three of the patients attributing for the three longest intervals between review and treatment.

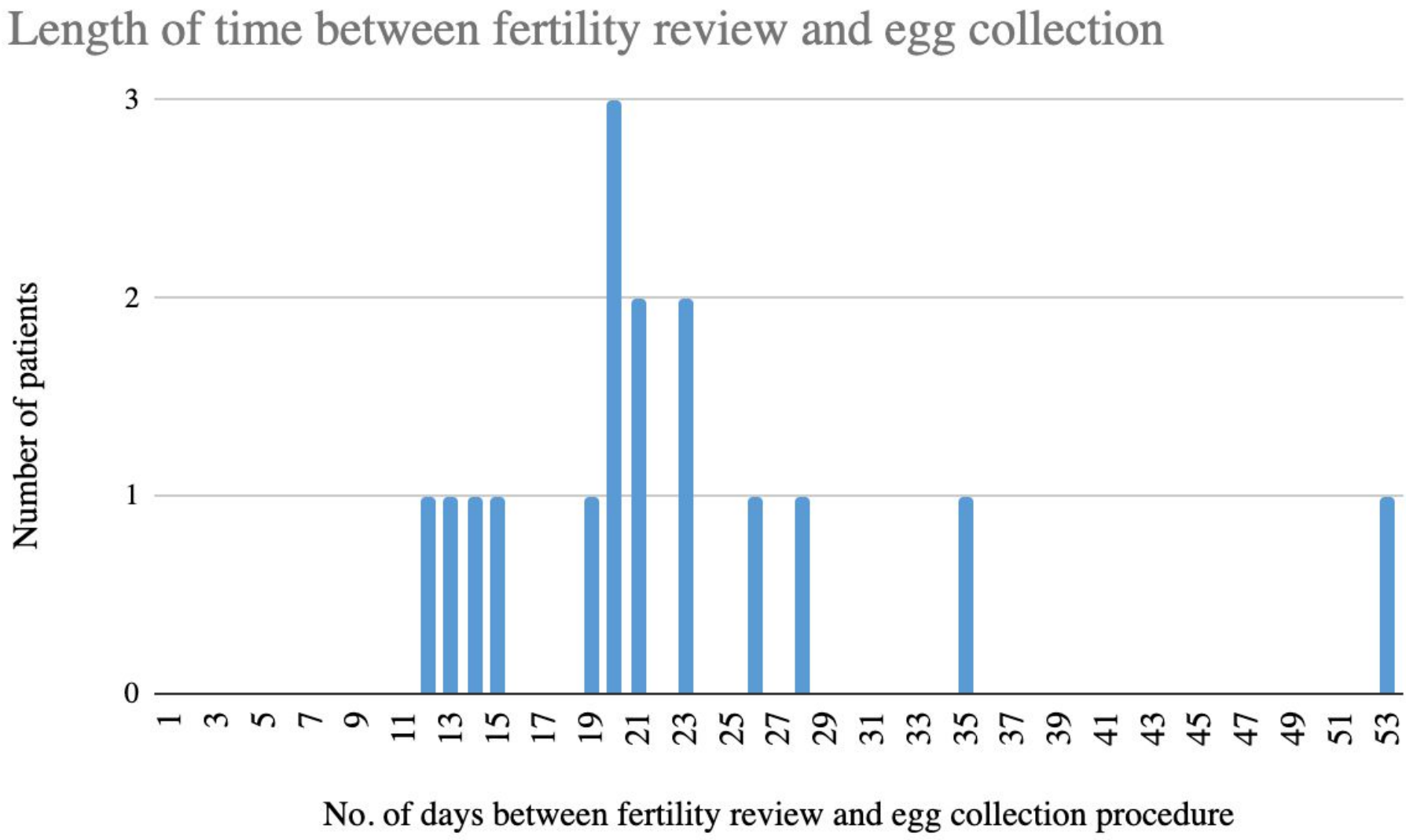


Figure 4. Graph demonstrating the length of time from oncology patients having their initial fertility review until the date of oocyte retrieval.

The average number of mature oocytes retrieved per person was 12 (range 1 to 32) and the average number vitrified was 9 (range 1 to 27). One patient opted for embryo cryopreservation and had 5 embryos frozen following collection of 10 oocytes. Sadly one patient (5%) had oocyte retrieval cancelled due to insufficient response.

CONCLUSIONS

The ability for rapid review and fast treatment scheduling allowed all women who wished fertility preservation management the chance to proceed in a timely fashion thereby minimising the impact of delay to oncological treatment. This has been aided through offering remote consultations via telephone and video consultation which has proven to be more accessible for many of these patients.

Despite random start GnRH antagonist stimulation cycles, a good number of oocytes were yielded for almost all patients.

A previous audit in our department 6 years ago discovered only 6 females of reproductive age undergoing gonadotoxic treatment were referred on for fertility preservation discussion. The increase in patients progressing to fertility preservation is a positive start that shows there have already been improvements though there is scope for further work.

REFERENCES

(1) <http://www.cancerresearchuk.org/cancer-info/cancerstats/incidence/age/>
(2) J. Maddams, D. Brewster, A. Gavin, J. Steward, J. Elliott, M. Utley, H. Moller. Cancer prevalence in the United Kingdom: estimates for 2008. Br J Cancer. 2009; 101; 541-547