1-4-2010

Who abandons embryos after IVF?

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Citation

Walsh AP, Tsar OM, Walsh DJ, Baldwin PM, Shkrobot LV, Sills ES. Who abandons embryos after IVF? Irish Medical Journal. 2010;103(4):107-10.

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Who Abandons Embryos After IVF?

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Abstract
This investigation describes features of in vitro fertilisation (IVF) patients who never returned to claim their embryos following cryopreservation. Frozen embryo data were reviewed to establish communication patterns between patient and clinic; embryos were considered abandoned when 1) an IVF patient with frozen embryo/s stored at our facility failed to make contact with our clinic for >2yrs and 2) the patient could not be located after a multi-modal outreach effort was undertaken. For these patients, telephone numbers had been disconnected and no forwarding address was available. Patient, spouse and emergency family contact/s all escaped detection efforts despite an exhaustive public database search including death records and internet directory portals. From 3244 IVF cycles completed from 2000 to 2008, 1 embryo was frozen in 1159 cases (35.7%). Those without correspondence for >2yrs accounted for 292 (25.2%) patients with frozen embryos; 281 were contacted by methods including registered (signature required) mail. The remaining 11 patients with no contact for >2yrs accounted for 28 unclaimed embryos (range 1-7/patient). Mean age in this group was 34.3yrs, 54.5% had Irish citizenship and 27.3% of cycles used donor oocytes. Cycle characteristics for cases involving abandoned embryos did not differ substantially from other patients. The goal of having a baby was achieved by 10/11 patients either by spontaneous conception, adoption or IVF. One patient moved away with conception status unconfirmed. The overall rate of embryo abandonment was 11/1159 (<1%) in this IVF population. Pre-IVF counselling minimises, but does not totally eliminate, the problem of abandoned embryos. As the number of abandoned embryos from IVF accumulates, their fate urgently requires clarification. We propose that clinicians develop a policy consistent with relevant Irish Constitutional provisions to address this medical dilemma.

Introduction
The growing number of Irish patients attending for assisted reproductive treatments has been accompanied by an ever-increasing number of frozen â extraâ embryos that IVF clinics must maintain in cryostorage. Most IVF patients with frozen embryos take this responsibility seriously, and painstakingly make their wishes known regarding the fate of their stored embryos during the informed consent process. This typically involves eventual embryo thaw and use in a frozen embryo transfer (FET) cycle. However, there is a very small group of patients who discontinue the relationship with their IVF clinic even though they leave frozen embryos behind. For these cases, there is no attempt to withdraw or modify the informed consent regarding the fate of their stored embryo/s. Embryos in this category are in limbo. They can be in this unclaimed, legally undefined, frozen state for many years and may be considered, for all practical purposes, â abandonedâ . This places the IVF clinic in a perpetual guardian relationship over embryos for which the actual parents never return and cannot be found. Very little is known about this problemâ how it happens, who is affected, and what can be done to resolve it. Accordingly, we focused on the medical charts of patients abandoning their own embryos to describe clinical and demographic features represented in this unusual population.

Methods
This study sampled IVF treatment cycles at a private IVF centre from 2000 to 2008, as shown in Figure 1. For this study, only patients with at least one IVF cycle proceeding to embryo transfer were included in group A. Medical charts for patients with any embryos frozen during this period were advanced into group B. We next determined which cryopreservation cases had no contact with the clinic for >2yrs (group C).
Cases were assigned to group D (abandoned) only when the following criteria were met: 1) an IVF patient with any cryopreserved embryo/s stored at our facility failed to respond to communication from our centre or made no contact with our clinic for >2yrs, and 2) the patient could not be located after a multi-modal outreach effort was undertaken. Clinic staff, office space and other resources were specifically designated to directly follow-up with all group C patients (by email, telephone, and regular mail) targeted first to home and then the work address, as listed in the medical record. If this failed, contact was attempted with the patientâ s spouse/partner using this same approach. When this did not yield contact, communication with the â notify in case of emergencyâ person named in the medical record (if different than spouse/partner) was undertaken next. Registered mail (signature required) was used as appropriate; internet search portals and public database searches including marriage/death records were also performed for all group C patients. When successfully contacted, these group C patients were provided with three options for disposition of their cryopreserved embryos: 1) return to our clinic for FET, 2) maintain their embryo/s in offsite long-term cryostorage, 3) make embryo/s available for anonymous donation to another couple, or 4) nominate some other arrangement for consideration. The remaining charts, representing patients who could not be contacted, comprised group D as abandoned embryo cases.

Figure 1: Schematic of patient distribution in an urban referral IVF centre showing relationship among all cases completed during study period (A), patients with cryopreserved embryos (B), patients with whom no contact could be established for at least two years (C), and patients who abandoned their embryos (D).

Results
A total of 3244 patients completed IVF treatment cycles (group A) and 1159 had embryo/s frozen (group B) during the study period. Groups C and D were comprised of 292 and 11 patients, respectively (Figure 1). All group D patients were married, and mean (–SD) ages were 34.3´–7 and 42.8´–7yrs for females and males, respectively. The absolute age difference between wives and husbands in group D ranged from 0.1-27.3yrs (mean´–SD = 4.9´–9yrs) with the wife being older than the husband in 36.4% of cases. None of these couples had a prior livebirth before their initial IVF consultation, but 4 of 11 had at least one prior pregnancy together. Donor oocytes were utilised in 27.3% of group D patients. None of the patients in group D sought additional counselling or gave any evidence of a marital relationship change. A summary of selected demographic characteristics for group D patients is given in Table 1. In group D, 5/11 patients conceived after the first IVF cycle (45.5%). A sufficient number of embryos was produced in the initial IVF cycle to permit cryopreservation for 7/11 of these patients (63.6%). The annualised relationship between overall IVF cycle volume and proportion of cases with cryopreserved embryos during the study period is shown in Figure 2; reproductive trajectory for the 11 cases in group D is depicted in Figure 3.

Figure 2: Total IVF volume (black bars) from 2000-2008, illustrating proportion of cases from which cryopreserved embryo were derived (gray bars). Number of abandoned embryos per annum is also shown for 2000-2006 (no data available after 2006).

Notes: AMA=advanced maternal age; DOR=donor oocyte recipient

Figure 3: Reproductive trajectory for 11 patients who ultimately abandoned their embryos from IVF. Negative pregnancy test results appear on lower X-axis and deliveries are at far right (Y-axis). Number of embryos remaining in storage derived from each patient is shown at far right. With the exception of one case (#5â moved before outcome confirmed), all patients attained pregnancy/delivery. Note that case 11, â Xâ indicates first (cancelled) donor oocyte IVF cycle. (+) = pregnancy from IVF.

Discussion
How decisions are made about non-transferred embryos has attracted considerable

study, although recent debates do not seem to reflect the full spectrum of values considered by fertility patients [1]. A recent study of IVF patients electing to discontinue embryo cryostorage found no significant difference in the choice selected between patients who achieved a pregnancy with delivery compared with those who did not [2]. Another study reported about 30% of couples would donate their embryos to research and >90% of respondents indicated that they would seek â outside helpâ to decide the fate of their embryos [3]. Occasionally patient interest in placing embryos into research protocols can decline after completing treatment, suggesting a need for a two-stage process to obtain fully informed consent [4]. For fertility patients, these are difficult decisions; sometimes they want options that are not even available to them [5]. In contrast, there has been almost no exploration of the vexing problem of human embryo abandonment. This research focused on frozen embryos derived from patients who could not be located; we were unable to identify any feature in this group which could have been used to predict subsequent embryo abandonment. These data underscore the apparent randomness of the clinical problem of embryo abandonment.

Although multiple demographic and clinical features of IVF patients failing to claim their surplus embryos are presented here, other questions remain. For example, could the observed abandonment be related to an inability to pay the storage bill? This possibility required careful consideration, as there is some expense associated with embryo freezing and storage. By convention, IVF patients are not typically billed for this service (1000 per annum at our centre) until after the first year of storage. In countries without universal government health coverage for fertility treatment (e.g., Ireland), patients are expected to self-fund their IVF. Personal economic forces might influence how patients regard frozen embryos depending on the contribution made by health insurance, which in other jurisdictions can specifically exclude coverage for preserving and storing embryos [6]. Like much in the province of clinical reproductive medicine, the concept of embryo abandonment in Ireland awaits a formal legal definition. Although the total number of abandoned IVF embryos among all Irish IVF clinics has not been determined, it is not a challenge unique to our country [7]. In the U.K., a provision for abandoned embryos permits IVF clinics to destroy unclaimed embryos if a specific sequence of steps is taken and still the rightful owner cannot be located. This possibility is discussed at the time written informed consent for IVF is obtained, and IVF patients in the U.K. are advised that embryo destruction will result if the patient becomes unreachable after 5yrs. This law therefore lawfully permits IVF clinics in the U.K. to â thaw without transferâ (allow to perish) any embryos left in their storage facility for an extended time [8].

Destroying abandoned embryos in Ireland raises important regulatory and constitutional issues because Medical Council guidelines expressly prohibit the deliberate and intentional destruction of in vitro life already formed [9]. Moreover, the practice of destroying abandoned embryos in Ireland is complicated by interpretations of Article 40.3.3 of the Irish Constitution, which acknowledges the right to life of the unborn and, with due regard to the equal right to life of the mother, guarantees in its laws to respect, and, as far as practicable, by its laws to defend and vindicate that right [10]. Nevertheless, it is also true that no law or guideline specifically addresses embryo abandonment, and what may or may not be lawfully done about it. Therefore, the problem exists in Ireland partly because of the absence of legislation to clarify the status and fate of frozen human embryos [11]. Given this ambiguity, using the â thaw without transferâ maneuver will depend on how this matter is settled by the Irish Courts [12].

It could be suggested that disposition of unclaimed embryos should follow the same procedure already used to determine custody for abandoned infants. Although key distinctions must be made between frozen embryos and live offspring, it might be argued that some aspects of orphaned infants are shared with abandoned embryos from IVF. For example, it is the parent/IVF patient who unilaterally elects to terminate the relationship in both scenarios, and the inferior (dependent) party is incapable of exercising any role in determining their individual fate. Accordingly, the tragedy of embryo abandonment comes to be viewed as todayâ s corollary to the â baby on the doorstepâ dilemma from generations past [13]. In USA, the American Society for Reproductive Medicine discourages the donation of embryos deemed abandoned to other couples without express consent [14]. But placing the embryo (rather than infant) at the centre of this model would allow the basic application of a familiar socio-legal framework in Ireland to manage the problem of embryo abandonment in IVF.

Could this approach work in Ireland? Clinicians, ethicists, social workers and legal scholars need to work collaboratively to establish uniform guidelines defining and addressing embryo abandonment. As providers of reproductive medical services, IVF physicians should guide this effort. It would be ideal if IVF clinics made abandoned embryos available for donation in a safe, confidential and anonymous fashion, to other medically-eligible couples willing to undergo embryo transfer. Published reports describing this in Ireland have yet to appear, but such treatment would be fully compliant with Medical Council guidelines which recognise and encourage the therapeutic benefit of embryo donation [9]. As other jurisdictions have already enacted statues to address the challenge of embryos abandoned after IVF, Ireland is well-placed to benefit from these experiences, mistakes and successes, as we fashion our own strategy.

Acknowledgements
The authors are grateful to Prof Michael M Alper (Harvard Medical School/Boston IVF) for his assistance during project development and manuscript preparation.

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Comments:
