

## IVF SUCCESS RATES - SANATORIUM HELIOS, BRNO - 2016

It is true that all IVF centres do not operate the same way. They do not have the same procedures, they do not use the same materials and devices, and their staff have not had their training of the same quality, and they do not produce embryos of the same quality. The price you pay for IVF is more or less similar everywhere in the Czech Republic. The health insurance companies also pay the same amount of money to all the centres. But your chance to fulfil your dream to get pregnant and to give birth to a healthy child, varies considerably, which can be clearly demonstrated on the data available on Czech IVF centres' websites.

At present there is currently no independent database to objectively compare success rates of individual centres. The available data are always cumulative and even outdated. That is why we always try to explain and clarify our results and reveal our data as much as possible. We conclude from our long experience and the experience gained in cooperation with the global leader in the field of IVF research by the Australian company Genea, whose exclusive licensing agreement we own for nearly 16 years.

Each of the IVF clinics provides the results / success differently. For clear idea we present the results of positive pregnancy tests (G +), clinical pregnancies with proven fetal heart activity (ASP +) and births (P). Unfortunately, we are not capable to get complete data on births, especially from foreign patients, so it is possible that the success rate is even slightly increased.

### **Our practices are different from those of other IVF centres, mostly because we ensure:**

- Before starting the treatment, we provide a comprehensive examination of both partners (hormonal profile, immunological tests, genetic tests, sperm count and sperm function tests, etc.
- Monitoring of stimulations with three to four regular check ups (blood collection + ultrasound examination).
- Correct timing of egg collection. Sometimes it is necessary to prolong or shorten the length of stimulation according to the check ups' results. Therefore, we work 7 days a week. Time to adapt to achieve optimal results.
- We always perform so called prolonged cultivation until the 5th-6th day of embryo development.
- We transfer only one embryo, always after prolonged cultivation and at the correct time relative to the phase of the cycle.
- We provide Preimplantation Genetic Screening examination in more than half of IVF cycles, which helps to eliminate genetically defective embryos from further use. To increase the success and reduce the time needed for a healthy pregnancy. In more than 70 % of the cycles we freeze all quality blastocysts (ie. cryocycles), so as to increase the chance of pregnancy with transfers in natural cycles.

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## The data about our IVF patients in 2016

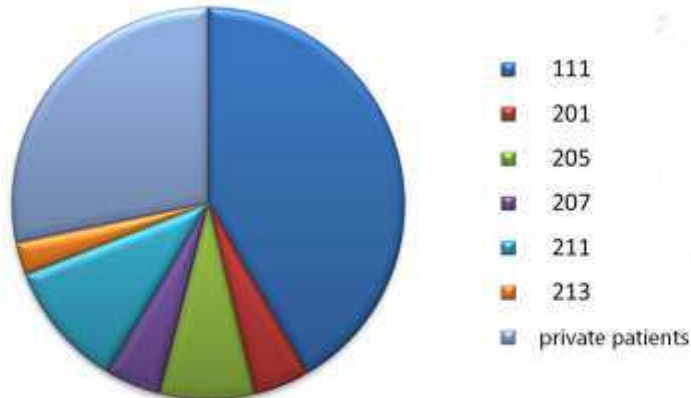


Chart 1: More than 70 % of all cycles were contributed by payment from health insurance.

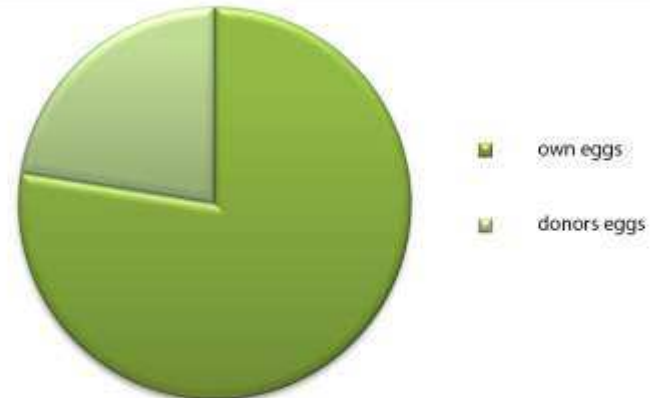


Chart 2: More than 75 % of all cycles have been the IVF cycles with one's own eggs.



Chart 3: The donor sperms were used in more than 13 % of all cycles.

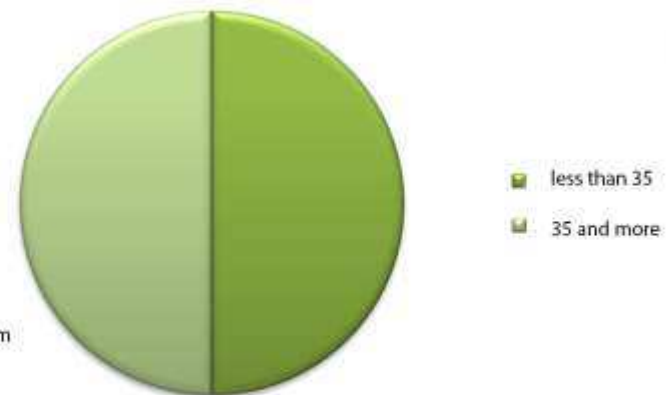


Chart 4: „Younger“ and „Elder“ patients make parts of the same size.

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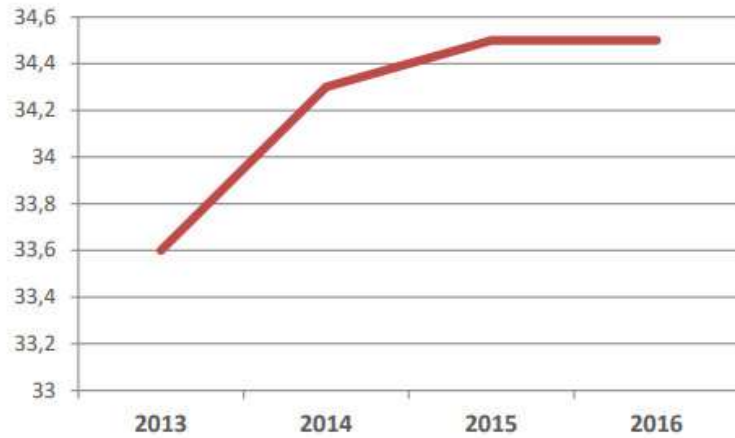


Chart 5: The average age of our IVF patients was the same like in the previous year.

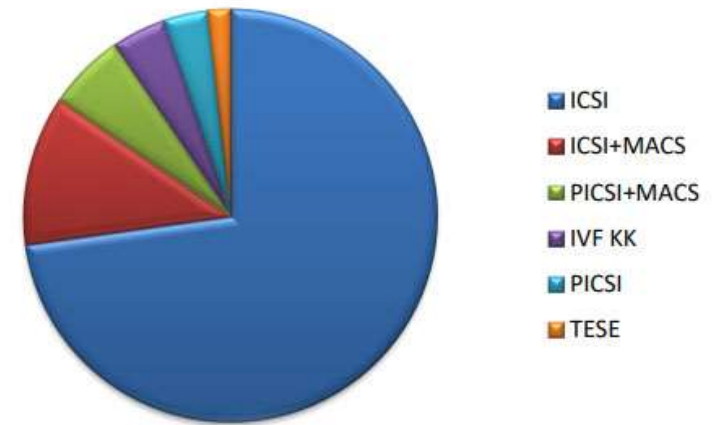


Chart 6: Methods to fertilize the eggs, which were selected based on the results of the examination of both partners.

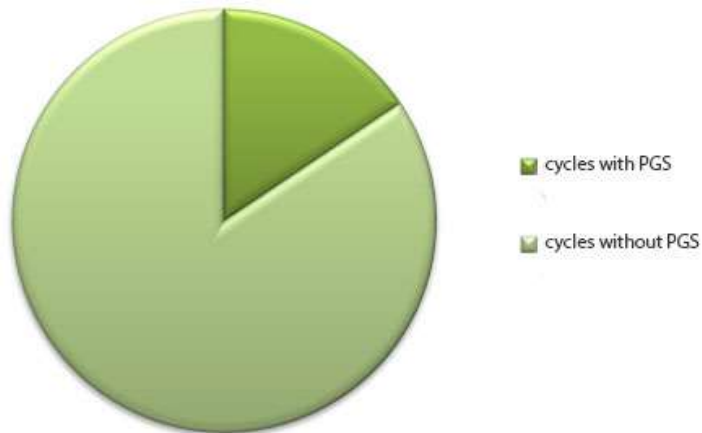


Chart 7 : Ratio of cycles with biopsy of embryos in the stage of blastocyst for PGD or PGS examination.

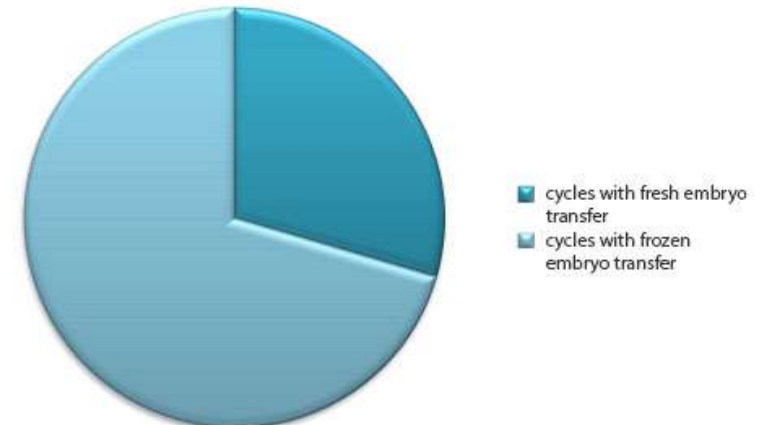


Chart 8: Ratio of cycles with fresh transfer – ie. Introduction of embryos in the cycle after stimulation and frozen cycles – all suitable embryos are vitrified and transferred in another cycle.

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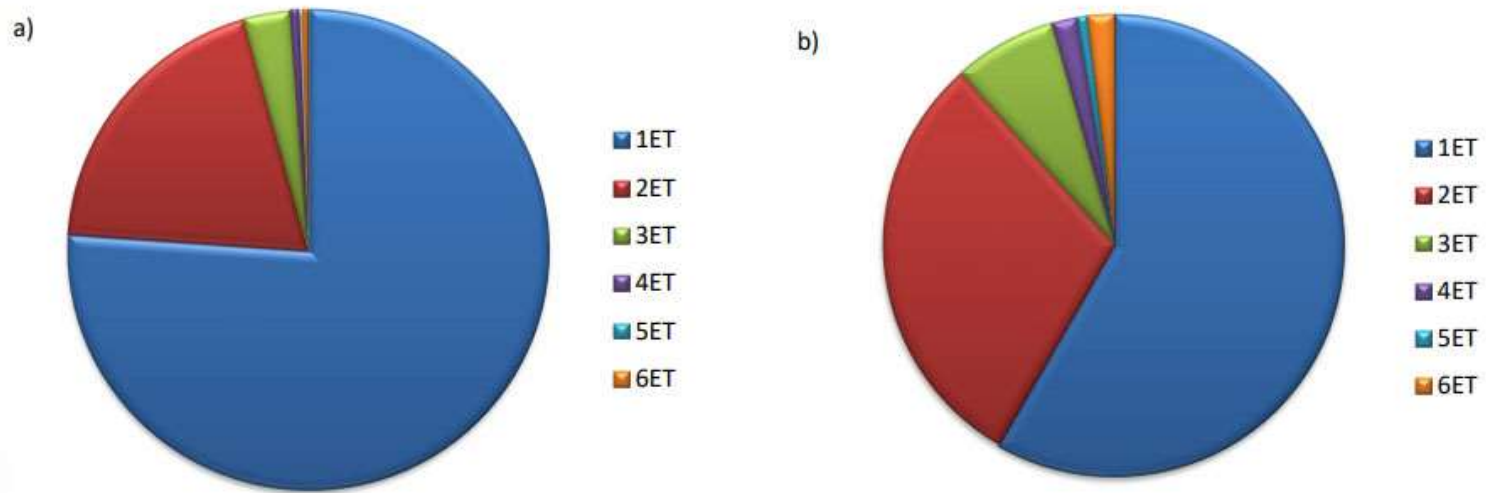


Chart 9: a) The chart shows number of patients, who have the patients undergone in 2016 in Sanatorium Helios 1, 2, 3, 4, 5, and 6 transfers within one year.

b) The chart shows number of transfers in each group.

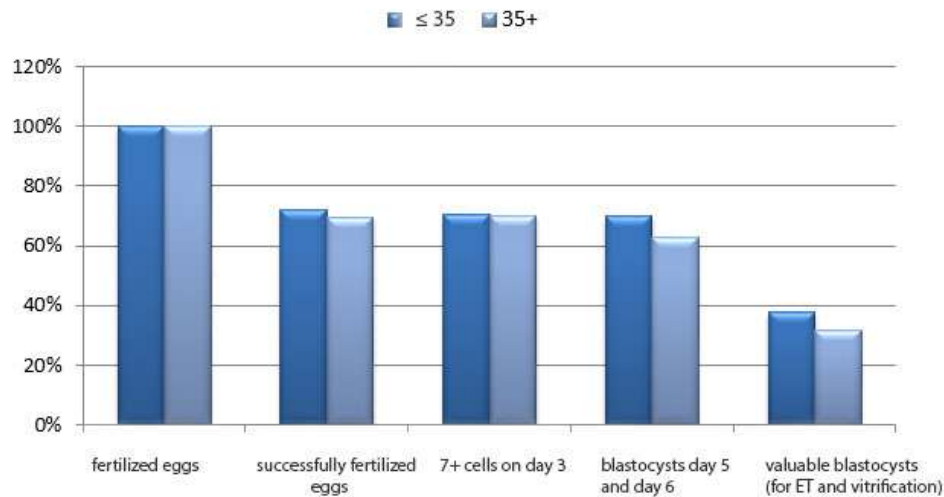
76 % of patients had only 1 transfer of one embryo.

In another part of the result analysis we compare the unique parametres just in this particular representative group: Patients, who have had just 1 opportunity to get pregnant.

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## 2. The comparison of the age of the patients

Year after year we have more and more patients with a „worse prognosis“. The patients have been older and they have undergone more unsuccessful cycles. There is an increase of patients, who come to us after an unsuccessful IVF in another fertility center. In the following charts we take only cycles with one’s own eggs for the comparison of the success rate.



*Chart 10: The comparison of egg fertilization and further development of embryos in younger and older patients. Obviously, on average, more than 30% of embryos that develop properly on day 3 would be unnecessarily transferred because they do not produce high quality embryos (blastocysts). It is also clear from the graph that although many embryos reach the stage of the blastocyst, these embryos are not of high quality and suitable for use (ET, freezing, PGD / PGS). On average, more than 30% of blastocyst does not have sufficient quality.*

	under 35	35 and more
part of the patients	50 %	50 %
patients average age	30,2	38,7
average number of IVF cycles	1,6	2,3
cycles without any picked up eggs after the stimulation	0,4 %	5 %
cycles without ET or frozen embryos	12,6 %	30,2 %
average number of collected eggs	15	8,5
average number of fertilized eggs	72 %	69,5 %
The cultivation yield	37,6 %	31,8 %
The average number of transferred embryos	1	1
The average number of vitrified embryos	2,5	1,2

*Table: The comparison of parameters in a group of younger and elder patients.*

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## 3. Success rate of the IVF cycles

### One transfer of just one embryo

Some patients have 1 transfer within one year, another patients have 2, 3, or even 4. For objective calculation of an overall success rate of IVF cycles we cannot count all the transfers and patients together. Some patients have more chances (transfers), others less. Most patients (76 %) have undergone just 1 transfer within the year 2016 – fresh embryo transfer (ET) or frozen embryo transfer (KET). Because we perform most of the IVF cycles as cryo-cycles, frozen embryo transfers (61%) predominate in this group as well.

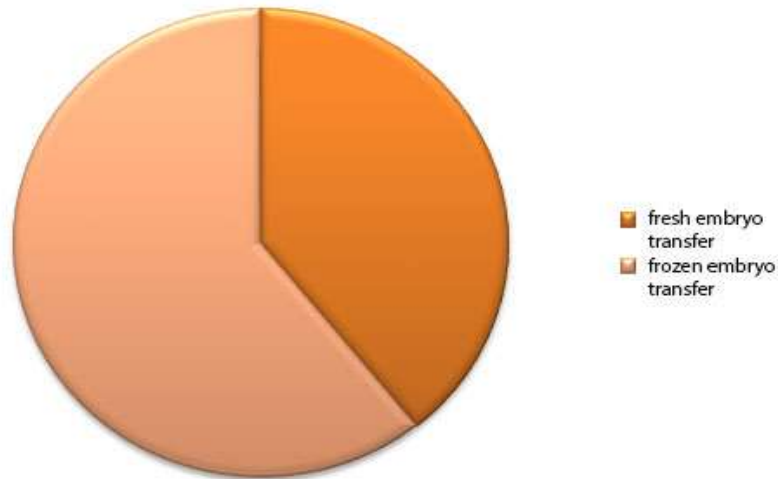


Chart 11: The type of transfers in the group of patients, who have undergone one transfer of one embryo in 2016 in Sanatorium Helios.

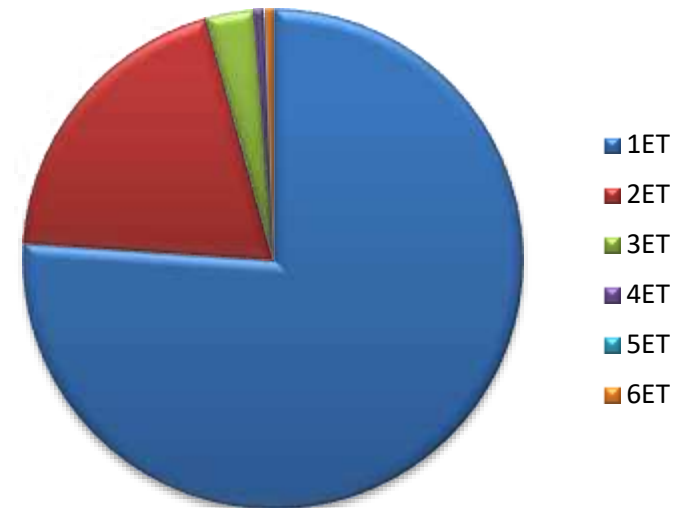


Chart 12 : The chart shows the number of patients who received 1, 2, 3, 4, 5, and 6 transfers from one IVF cycle in one year in Sanatorium Helios in 2016.

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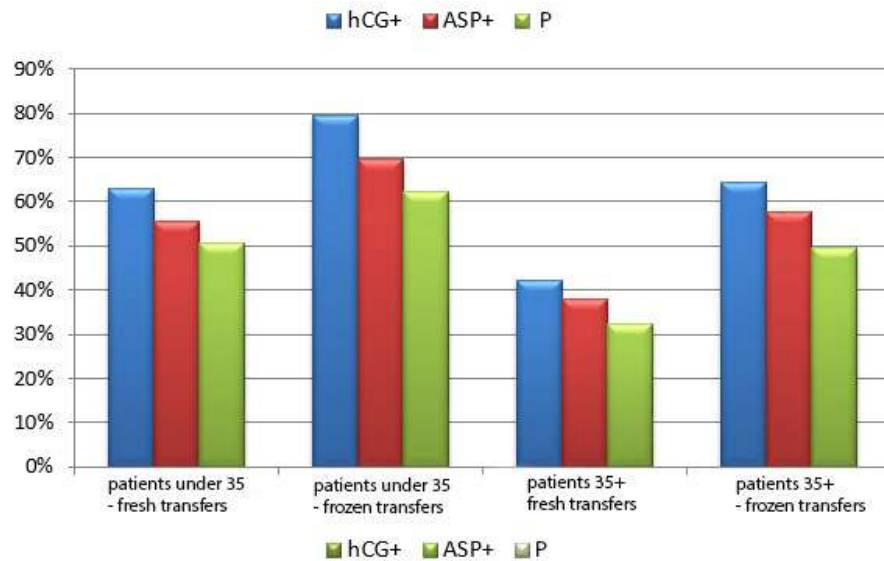


Chart 13: Comparison of success of the fresh transfers and the frozen embryo transfers (KET) - G + are positive pregnancy tests, ASP+ clinical pregnancies with fetal heart activity, P is a parturition, birth. This is the comparison in the group of younger and elder patients (under 35, and 35 +)

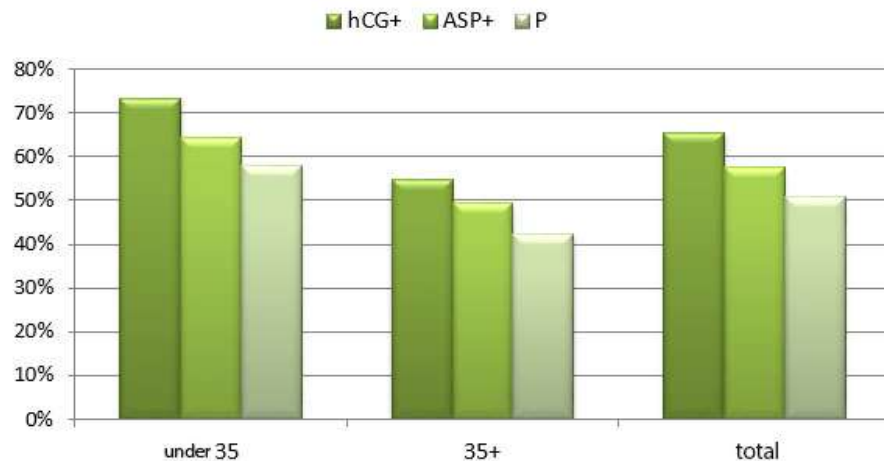
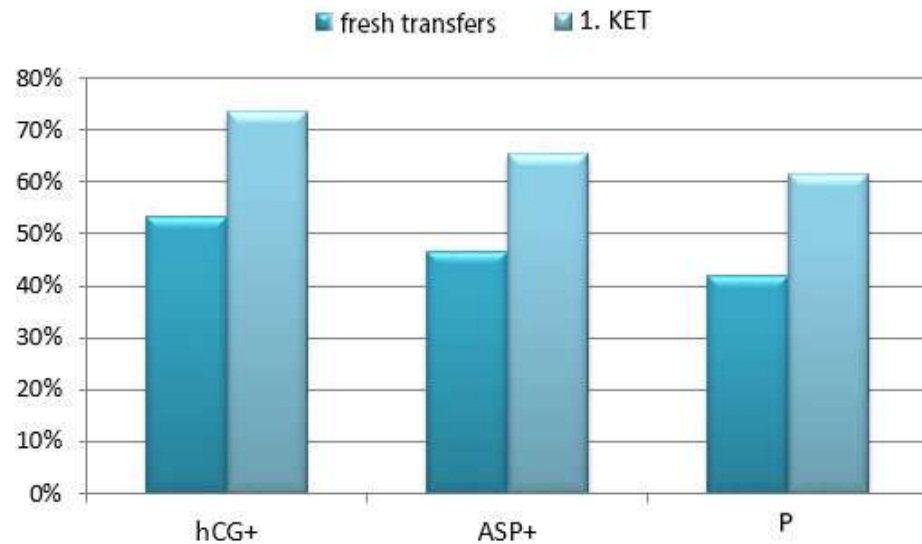


Chart 14: The overall success rate for all patients in 2016 who had one transfer of 1 embryo - hCG+ are positive pregnancy tests, ASP+ clinical pregnancy with evidence of the fetal heart action, P parturition, birth.

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## 3.1 First KET

Based on our long-term experience and current scientific knowledge, we prefer a natural cycle transfer. Therefore, there are a lot of transfers that could be carried out as "fresh" in one of the other cycles as KET. The following charts show the results that clearly confirm our right course.



*Chart 15: Comparison of success of the fresh transfers and the first frozen embryo transfers (KET) - hCG+ are positive pregnancy tests, ASP+ are clinical pregnancies with fetal heart activity, P is a parturition - birth.*

**There is a 20% higher success rate in vitrified embryo transfers (KET) compared to fresh cycles after the stimulation. Higher success rates of pregnancy are caused by the natural cycle in which the embryos are transferred in case of a frozen embryo transfer, and a higher percentage of genetically correct embryos are projected in this group.**



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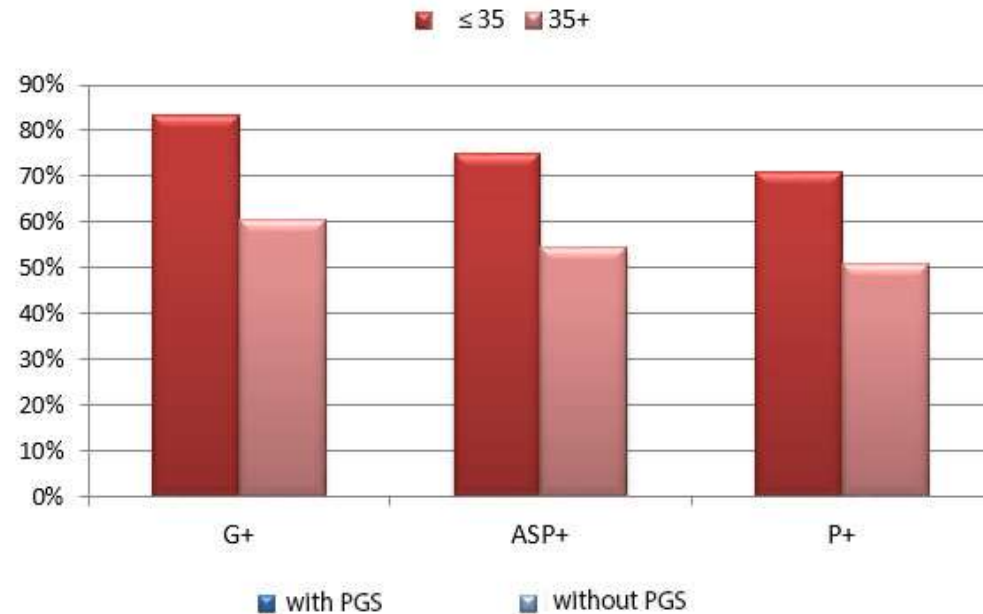


Chart 16: Comparing the success rate of 1. KET in the group of younger and elder patients - hCG+ are positive pregnancy tests, ASP+ clinical pregnancy with fetal heart activity, P is birth

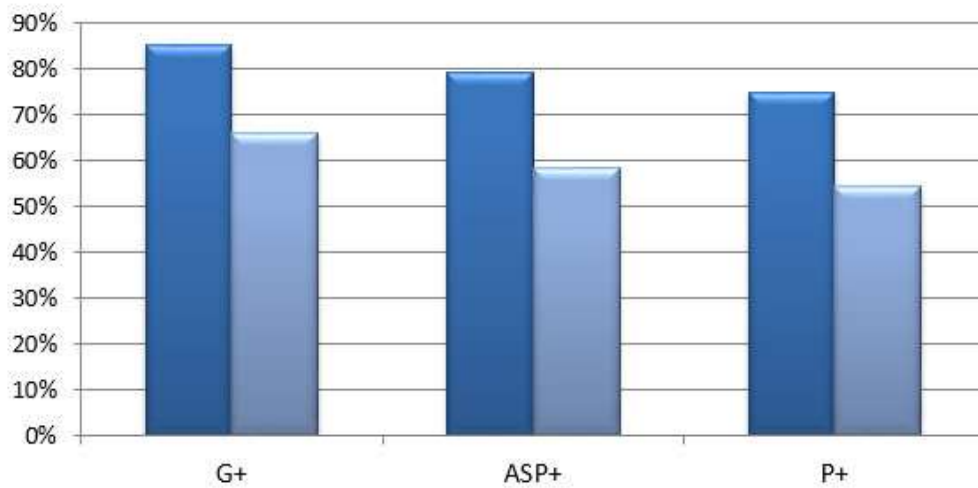
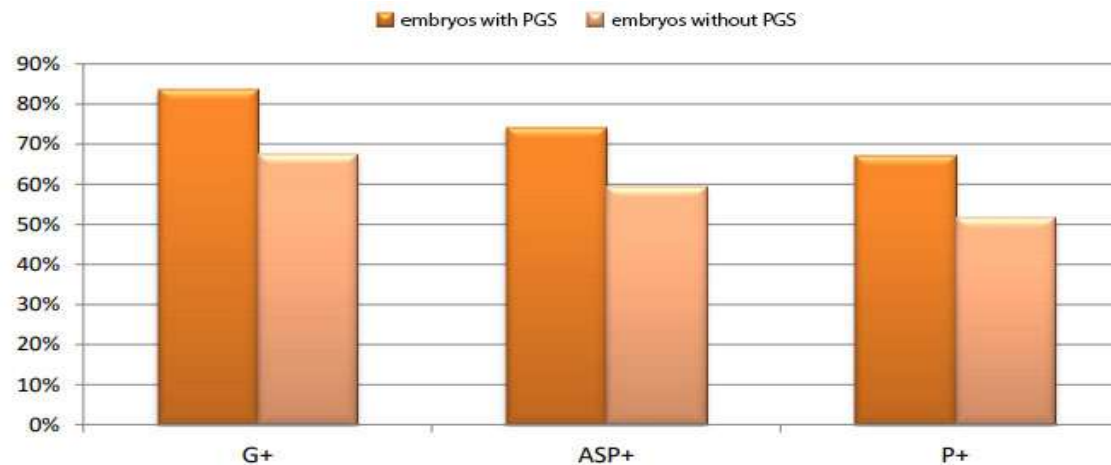


Chart 17: The comparison of the success rate of 1. KETs of embryos that have undergone PGS and have found no genetic defects and embryos without PGS - hCG+ are positive pregnancy tests, ASP+ clinical pregnancy with fetal heart activity, P+ is birth.

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## 3.3 Genetic testing of embryos

Even though good quality blastocysts have arisen (developmental stage of 5th and 6th day of embryo development) and both parents are genetically correct (having a normal karyotype), genetically defective embryos can emerge and develop. Such embryos may cease to develop very soon, but these errors may also be the reason why a high-quality embryo (in terms of development and morphology) does not nestle in the uterus, or pregnancy occurs, but it is very early lost.



*Chart 17: Comparing the success rate of embryo transfers after PGS and without PGS - hCG+ are the positive pregnancy tests, ASP+ - clinical pregnancies with fetal heartbeat, P birth.*

Elderly women produce a significantly higher number of chromosomally abnormal blastocysts compared to younger women - according to our results, about one-third of genetically abnormal embryos occur in group of younger women (under 35 years of age), whereas in older women (35 years and over) they are genetically abnormal after the PGD / PGS aCGH examination, almost every second embryo was labeled. If embryos are labeled genetically abnormal after PGD / PGS, then such genetically defective embryos are excluded from further use, thus increasing success and shortening the time required for successful pregnancy.

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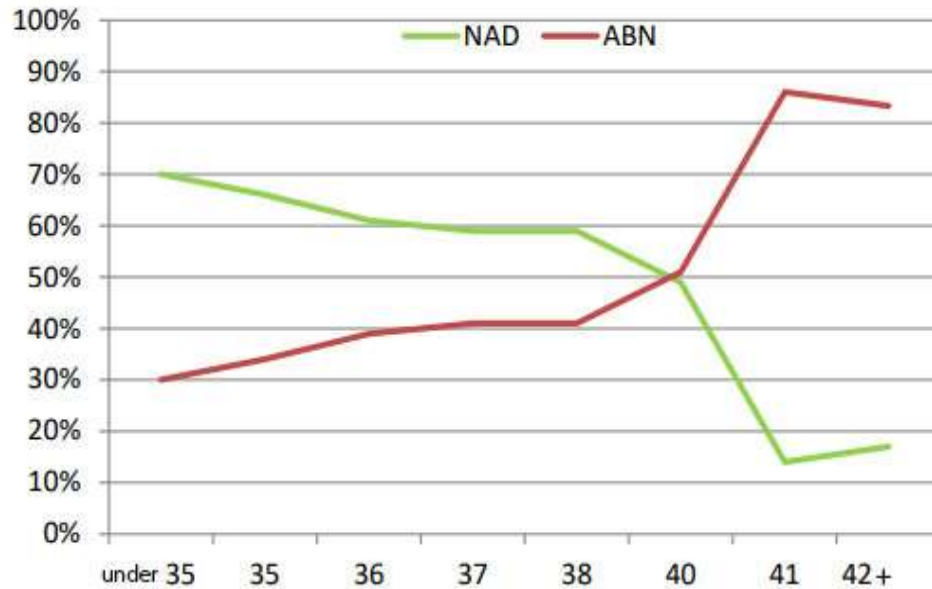


Chart 19: The comparison of gene abnormal embryos in relation to female age (The data of SH Brno from 1158 embryos examined by PGS in 2011-2017) - NAD - embryos without found genetic errors, ABN -genetically defective.

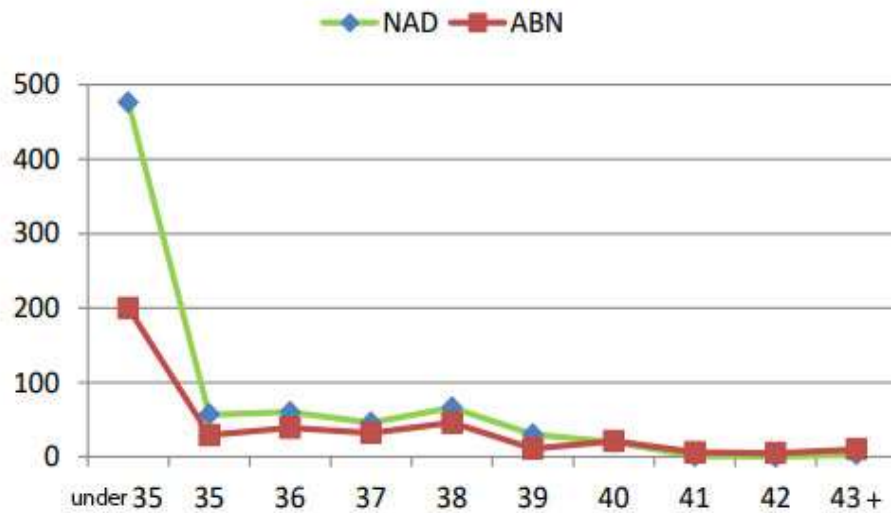


Chart 20: The number of genetically tested embryos and the occurrence of genetically defective embryos depending on the age of the woman. Obviously, with age, the number of embryos to be scanned is decreasing and embryos with genetic defects are growing. (data SH Brno from 1158 embryos examined by PGS in 2011-2017) - NAD embryos without found genetic errors, ABN genetically defective embryos.

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## 3.4 Success rate after more than one transfer

Of course we can not count only patients who have had one single embryo transfer. Sometimes it is necessary to do several transfers to achieve the success. The data for the year 2015 show, that after 3 transfers (1, 2 or 3 transfers) have delivered nearly 70 % of patients!

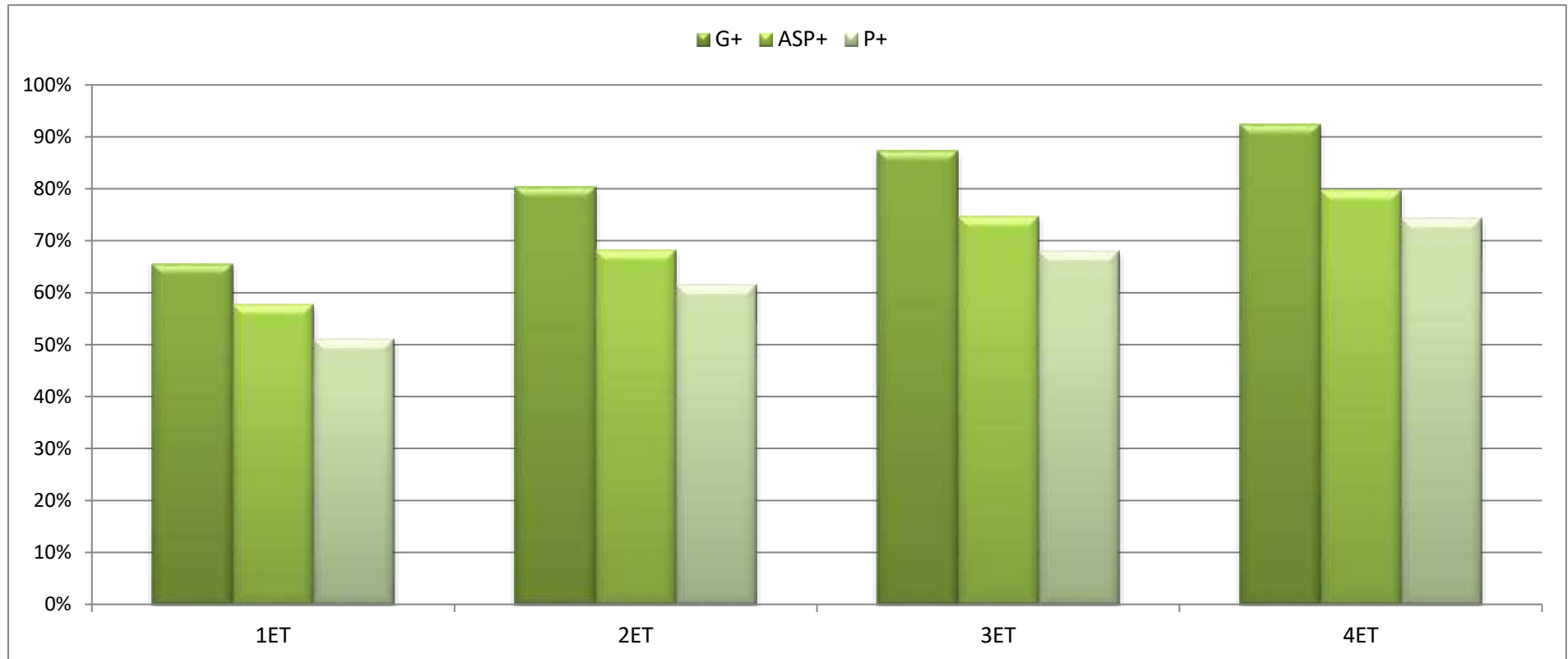


Chart 21: This following chart shows how the patients were successful in other "groups" - those who had during 2016 two transfers (100 patients, thus 200 transfers), 3 transfers (16 patients), 4 transfers (3 patients) and 4 transfers (3 patients). In the "group" 4, 5 and 6 transfers there are only a few patients (3, 1, 2), which is a low number of patients, so these data are not too representative.

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*If you have a tangled head from the previous charts, you will understand the following:*

*49.5 % of all those patients, who have undergone the embryo transfer from one's own eggs at Sanatorium Helios in Brno in 2016, gave birth.*

We hope that not only our results have been persuasive,  
that Sanatorium Helios is the best choice for you.

Please come and convince about it yourself.

We look forward to meeting you.

On behalf of the whole team of Sanatorium Helios

Pavel Texl, M. D., Chief Physician