Supplemental Table 1: Prevalence of ovarian hyperstimulation syndrome by maternal characteristics in fresh autologous and embryo banking cycles from 2010 to 2015

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Number of cases of any OHSS** | **%** | **Number of cases of moderate OHSS** | **%** | **Number of cases of severe OHSS** | **%** | **IVF cycles without OHSS** | **%** |
| Age (y) at oocyte retrievala |  |  |  |  |  |  |  |  |
| <30 | 1680 | 2.10 | 1334 | 1.66 | 346 | 0.43 | 76798 | 95.81 |
| 30-34 | 2908 | 1.40 | 2242 | 1.08 | 666 | 0.32 | 202348 | 97.21 |
| 35-37 | 1186 | 0.78 | 929 | 0.61 | 257 | 0.17 | 150030 | 98.44 |
| 38-40 | 568 | 0.38 | 459 | 0.30 | 109 | 0.07 | 149691 | 99.25 |
| ≥41 | 163 | 0.12 | 127 | 0.09 | 36 | 0.03 | 139691 | 99.77 |
| Race/Ethnicitya |  |  |  |  |  |  |  |  |
| Non-Hispanic White | 3404 | 1.11 | 2657 | 0.86 | 747 | 0.24 | 300437 | 98.99 |
| Non-Hispanic Black | 424 | 1.25 | 323 | 0.95 | 101 | 0.30 | 33008 | 98.99 |
| Asian/Pacific Islander | 582 | 0.73 | 468 | 0.59 | 114 | 0.14 | 78531 | 98.99 |
| Hispanic | 462 | 1.13 | 371 | 0.91 | 91 | 0.22 | 39848 | 98.99 |
| Other | 6 | 0.50 | 6 | 0.50 | 0 | 0.00 | 1179 | 98.99 |
| Number of prior pregnanciesa |  |  |  |  |  |  |  |  |
| 0 | 3693 | 1.09 | 2890 | 0.85 | 803 | 0.24 | 331320 | 97.82 |
| 1 | 1457 | 0.80 | 1112 | 0.61 | 345 | 0.19 | 179009 | 98.40 |
| 2 or more | 1354 | 0.65 | 1088 | 0.52 | 266 | 0.13 | 205553 | 98.70 |
| Number of prior miscarriagesa |  |  |  |  |  |  |  |  |
| 0 | 5002 | 0.98 | 3902 | 0.77 | 1100 | 0.22 | 498552 | 98.03 |
| 1 | 980 | 0.72 | 763 | 0.56 | 217 | 0.16 | 134083 | 98.56 |
| 2 or more | 517 | 0.63 | 421 | 0.51 | 96 | 0.12 | 81583 | 98.75 |
| Number of prior preterm birthsa |  |  |  |  |  |  |  |  |
| 0 | 6279 | 0.89 | 4911 | 0.70 | 1368 | 0.19 | 690438 | 98.21 |
| 1 | 189 | 0.94 | 149 | 0.74 | 40 | 0.20 | 19737 | 98.12 |
| 2 or more | 22 | 0.86 | 18 | 0.71 | 4 | 0.16 | 2509 | 98.28 |
| Number of prior full-term birthsa |  |  |  |  |  |  |  |  |
| 0 | 5236 | 0.96 | 4072 | 0.54 | 1164 | 0.21 | 533887 | 98.08 |
| 1 | 948 | 0.70 | 757 | 0.54 | 191 | 0.14 | 133915 | 98.60 |
| 2 or more | 314 | 0.66 | 255 | 0.54 | 59 | 0.12 | 46772 | 98.68 |
| Body mass indexa |  |  |  |  |  |  |  |  |
| <18.5 | 174 | 1.01 | 138 | 0.80 | 36 | 0.21 | 16947 | 97.99 |
| 18.5 – 24.9 | 3356 | 1.02 | 2568 | 0.78 | 788 | 0.24 | 321666 | 97.96 |
| 25.0 – 29.9 | 1294 | 0.93 | 1030 | 0.74 | 264 | 0.19 | 136024 | 98.13 |
| ≥30.0 | 950 | 0.89 | 766 | 0.72 | 184 | 0.17 | 104549 | 98.22 |
| Infertility diagnosisa |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Ovulation disorders | 2424 | 4.26 | 1838 | 1.92 | 586 | 0.61 | 89358 | 93.21 |
| Tubal factor | 940 | 0.40 | 762 | 0.32 | 178 | 0.08 | 95488 | 99.21 |
| Male factor | 2525 | 1.14 | 1983 | 1.00 | 542 | 0.27 | 193701 | 97.59 |
| Endometriosis | 606 | 0.93 | 471 | 0.72 | 135 | 0.21 | 63790 | 98.14 |
| Diminished ovarian reserve | 314 | 0.14 | 251 | 0.11 | 63 | 0.03 | 220975 | 99.72 |
| Uterine factor | 336 | 0.84 | 283 | 0.71 | 53 | 0.13 | 39140 | 98.31 |
| Unexplained | 753 | 0.81 | 572 | 0.62 | 181 | 0.20 | 91176 | 98.38 |
| Complicationsa |  |  |  |  |  |  |  |  |
| Hospitalization | 894 | 41.89 | 401 | 18.79 | 493 | 23.10 | 346 | 16.21 |
| Cancellation of cycle prior to retrieval | 146 | 2.20 | 106 | 1.59 | 40 | 0.60 | 6359 | 95.61 |
| Treatment cycleb |  |  |  |  |  |  |  |  |
| GNRH-receptor antagonist suppression | 2607 | 0.86 | 1999 | 0.66 | 608 | 0.20 | 298614 | 98.28 |
| GNRH-receptor agonist suppression | 2746 | 1.55 | 2120 | 1.19 | 626 | 0.35 | 172153 | 96.91 |
| Agonist flare | 262 | 0.37 | 221 | 0.31 | 41 | 0.06 | 70295 | 99.26 |
| Number of oocytes retrievedc |  |  |  |  |  |  |  |  |
| 0-10 | 525 | 0.16 | 428 | 0.13 | 97 | 0.03 | 323542 | 99.68 |
| 11-15 | 1059 | 0.96 | 836 | 0.35 | 223 | 0.21 | 149642 | 98.49 |
| 16-30 | 3354 | 2.84 | 2650 | 3.59 | 704 | 0.58 | 156740 | 92.99 |
| >30 | 1413 | 6.18 | 1065 | 4.66 | 348 | 1.52 | 20036 | 87.64 |
| Transfer not attemptedd |  |  |  |  |  |  |  |  |
| No transfer | 2916 | 31.24 | 2366 | 27.04 | 550 | 8.40 | 70659 | 33.32 |
| Number of supernumerary embryos cryopreservede |  |  |  |  |  |  |  |  |
| 0 | 690 | 0.27 | 527 | 0.21 | 163 | 0.06 | 254940 | 99.46 |
| 1-2 | 532 | 0.65 | 375 | 0.46 | 157 | 0.19 | 80941 | 98.70 |
| 3-4 | 521 | 0.99 | 370 | 0.71 | 151 | 0.29 | 51414 | 98.01 |
| 5 or more | 986 | 1.77 | 722 | 1.30 | 264 | 0.47 | 53709 | 96.46 |
| Maximum number of fetal hearts prior to reductione |  |  |  |  |  |  |  |  |
| Not pregnant | 551 | 0.22 | 489 | 0.20 | 62 | 0.03 | 244842 | 99.55 |
| 1 | 1149 | 0.88 | 811 | 0.62 | 338 | 0.26 | 128879 | 98.25 |
| 2 | 881 | 1.68 | 594 | 1.13 | 287 | 0.55 | 50651 | 96.64 |
| 3+ | 60 | 1.52 | 42 | 1.06 | 18 | 0.45 | 3840 | 96.97 |
| Live birthe | 1902 | 0.67 | 1333 | 0.47 | 569 | 0.20 | 161621 | 98.66 |
| Pluralitye |  |  |  |  |  |  |  |  |
| Singleton | 1160 | 0.96 | 822 | 0.68 | 338 | 0.28 | 118321 | 98.08 |
| Twin | 715 | 1.66 | 491 | 1.14 | 224 | 0.52 | 41604 | 96.68 |
| Triplet or higher-order | 27 | 1.54 | 20 | 1.14 | 7 | 0.40 | 1696 | 96.91 |
| Positive HCG e,f | 2306 | 1.20 | 1617 | 0.83 | 689 | 0.21 | 240476 | 97.76 |

Abbreviations: OHSS, ovarian hyperstimulation syndrome; GnRH, gonadotropin releasing hormone; IVF, in vitro fertilization; HCG, human chorionic gonadotropin

a Among fresh autologous and embryo banking cycles

b Among fresh autologous cycles only (excluding embryo banking cycles).

c Among fresh autologous and embryo banking cycles in which an oocyte retrieval was performed

d Among fresh autologous cycles in which a retrieval was performed (excluding embryo banking cycles)

e Among fresh autologous cycles in which a retrieval was performed and at least one embryo was transferred (excluding embryo banking cycles)

f Includes intrauterine pregnancy, biochemical pregnancy, ectopic and heterotopic pregnancy

Supplemental Table 2: Rate (per 1000 cycles) of OHSS in fertility clinics by percentage of banking cycles (2010-2015)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quartile (Highest percentile)** | **1 (25)** | **2 (50)** | **3 (75)** | **4 (100)** | **p-trend** |
| Number of clinics | 130 | 131 | 131 | 131 |  |
| Mean percentage of banking cycles | 1.38 | 5.73 | 13.72 | 37.99 |  |
| Number of cycles | 101066 | 228553 | 213548 | 229332 |  |
| Rate of any OHSS | 11.60 | 8.5 | 9.6 | 5.2 | 0.1273 |
| Rate of severe OHSS | 2.7 | 2.5 | 1.8 | 0.7 | 0.0424 |
| Rate of moderate OHSS | 8.9 | 6.0 | 7.9 | 4.5 | 0.2564 |