**aOBSTETRIC AND NEONATAL OUTCOMES IN PREGNANT WOMEN VACCINATED WITH COVID-19 VACCINES: A PROSPECTIVE COHORT STUDY**

Table 1. Maternal baseline demographics of participants

|  |  |  |  |
| --- | --- | --- | --- |
| **Baseline demographics** | **Astrazeneca**  **N=441** | **Pfizer**  **N=513** | **p-value** |
| Maternal age – years | 31.99±4.37 | 30.83±4.47 | <0.001 |
| Previous pregnancies – n (%) |  |  | <0.001 |
| 0 | 240 (54.42%) | 206 (40.16%) |  |
| 1 | 92 (20.86%) | 158 (30.80%) |  |
| 2 | 87 (19.73%) | 119 (23.20%) |  |
| ≥ 3 | 22 (4.98%) | 30 (5.84%) |  |
| Type of pregnancy – n (%) |  |  | 0.009 |
| Natural | 385 (87.30%) | 475 (92.59%) |  |
| IVF | 56 (12.70%) | 38 (7.41%) |  |
| Number of vaccination dose – n (%) |  |  | <0.001 |
| Only 1 dose | 176 (39.9%) | 99 (19.3%) |  |
| Fully vaccinated | 265 (60.1%) | 414 (80.7%) |  |
| Gestational age at vaccination - weeks | 31.91±4.47 | 32.42±4.02 | 0.067 |
| High blood pressure before vaccination | 0 (0.00%) | 3 (0.58%) | . |
| Diabetes before vaccination | 58 (13.15%) | 62 (12.09%) | 0.691 |

Table 2. Side effects of two vaccination groups

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **AstraZeneca** | | **Pfizer** | | **P1** | **P2** |
| **Side effects – n (%)** | **First dose**  **(N=441)** | **Second dose**  **(N=265)** | **First dose**  **(N=513)** | **Second dose**  **(N=414)** |
| Pain at injection site | 347 (78.7%) | 37 (14.0%) | 411 (80.1%) | 167 (40.4%) | 0.642 | <0.001 |
| Swelling at injection site | 43 (9.8%) | 6 (2.3%) | 45 (8.8%) | 26 (6.3%) | 0.683 | 0.026 |
| Redness at injection site | 11 (2.5%) | 1 (0.4%) | 8 (1.6%) | 11 (2.7%) | 0.425 | 0.034 |
| Itching at injection site | 70 (15.9%) | 5 (1.9%) | 64 (12.5%) | 9 (2.2%) | 0.158 | 1 |
| Self reported fatigue | 261 (59.2%) | 15 (5.7%) | 60 (11.7%) | 64 (15.5%) | <0.001 | <0.001 |
| Sore throat | 10 (2.3%) | 0 (0.0%) | 1 (0.2%) | 0 (0.0%) | 0.007 | . |
| Runny nose | 5 (1.1%) | 0 (0.0%) | 2 (0.4%) | 0 (0.0%) | 0.259 | . |
| Coughing | 6 (1.4%) | 0 (0.0%) | 0 (0.0%) | 2 (0.5%) | 0.01 | 0.524 |
| Headache | 183 (41.5%) | 7 (2.7%) | 43 (8.4%) | 37 (9.0%) | <0.001 | 0.002 |
| Muscle pain | 187 (42.4%) | 10 (3.8%) | 49 (9.6%) | 38 (9.2%) | <0.001 | 0.012 |
| Chilling | 159 (36.1%) | 5 (1.9%) | 14 (2.7%) | 16 (3.9%) | <0.001 | 0.222 |
| Over 38oC fever | 113 (25.6%) | 13 (4.9%) | 1 (0.2%) | 49 (11.9%) | <0.001 | 0.004 |
| Nausea | 34 (7.7%) | 0 (0.0%) | 5 (1.0%) | 5 (1.2%) | <0.001 | 0.162 |
| Joint pain | 78 (17.7%) | 19 (7.2%) | 8 (1.6%) | 14 (3.4%) | <0.001 | 0.039 |
| Stomachache | 7 (1.6%) | 2 (0.8%) | 1 (0.2%) | 0 (0.0%) | 0.028 | 0.152 |
| Diarrhea | 16 (3.6%) | 0 (0.0%) | 2 (0.4%) | 2 (0.5%) | 0.001 | 0.524 |
| Rash skin | 4 (0.9%) | 1 (0.4%) | 1 (0.2%) | 0 (0.0%) | 0.188 | 0.39 |
| Vaginal haemorrhage | 4 (0.9%) | 0 (0.0%) | 1 (0.2%) | 0 (0.0%) | 0.188 | . |
| Others | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0.527 | . |
| Thrombocytopenia | 6 (1.4%) | 1 (0.4%) | 4 (0.8%) | 4 (1.0%) | . | 0.653 |
| Myocarditis | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | . | . |
| Anaphylactic shock | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | . | . |

Table 3. Gestational and neonatal outcomes between two groups of vaccination

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Prgenancy characteristics** | **Astrazeneca**  **(N=441)** | **Pfizer**  **(N=513)** | **RR**  **(95% CI)** | **Between group difference**  **(95% CI)** | **p** |
| High blood pressure after vaccination | 1 (0.23%) | 5 (0.97%) | 4.3 (0.5, 36.65) | 0.75 (-0.42, 1.92) | 0.225 |
| Diabetes after vaccination | 1 (0.23%) | 5 (0.97%) | 4.3 (0.5, 36.65) | 0.75 (-0.42, 1.92) | 0.225 |
| Gestational age at birth – weeks | 38.44±1.60 | 38.57±1.34 | - | 0.1 (-0.1, 0.3) | 0.176 |
| Preterm delivery – n (%) |  |  |  |  |  |
| < 28 weeks | 3 (0.68%) | 0 (0%) | - | - | - |
| < 34 weeks | 6 (1.36%) | 8 (1.56%) | 1.15 (0.4, 3.28) | 0.2 (-1.52, 1.92) | 0.95 |
| < 37 weeks | 28 (6.35%) | 34 (6.63%) | 1.04 (0.64, 1.69) | 0.28 (-3.07, 3.62) | 0.9 |
| Oligohydramnios | 12 (2.73%) | 15 (2.92%) | 1.07 (0.51, 2.26) | 0.19 (-2.11, 2.49) | 0.95 |
| Polyhydramnios | 14 (3.17%) | 23 (4.48%) | 1.41 (0.74, 2.71) | 1.31 (-1.33, 3.95) | 0.381 |
| Being monitored at ICU | 0 (0) | 2 (0.39) | - | - | - |
| Stillbirth | 2 (0.45) | 1 (0.19) | -0.26 (-1.2, 0.69) | 0.43 (0.04, 4.72) | 0.6 |
| Maternal death | 0 (0.00%) | 0 (0.00%) | - | - | . |
| **Neonatal characteristics** |  |  |  |  |  |
| Birth weight - grams | 3148.25±376.76 | 3132.10±403.51 | - | -16.1 (-65.9, 33.6) | 0.524 |
| Low birth weight (under 2500g) | 11 (2.51%) | 27 (5.26%) | 2.1 (1.05, 4.18) | 2.75 (0.12, 5.39) | 0.046 |
| Heavy birth weight (over 4000g) | 6 (1.37%) | 10 (1.95%) | 1.42 (0.52, 3.88) | 0.58 (-1.25, 2.41) | 0.66 |
| Birthweight percentile | 50.00 [25.00; 75.00] | 50.00 [25.00; 75.00] | - | - | 0.445 |
| Birtweight < 10th percentile | 65 (14.74%) | 85 (16.57%) | 1.12 (0.84, 1.51) | 1.83 (-3, 6.66) | 0.493 |
| NICU | 24 (5.45%) | 23 (4.49%) | 0.82 (0.47, 1.44) | -0.96 (-3.95, 2.03) | 0.594 |
| Birth defects | 4 (0.91%) | 4 (0.78%) | 0.86 (0.22, 3.42) | -0.13 (-1.42, 1.17) | 0.95 |



Table 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | <34 | | 34-<37 | | 37-<38 | | 38-<39 | | 39-<40 | | 40-<41 | | 41 | |
|  | AZ  (N = 6) | Pf  (N = 8) | AZ  (N = 22) | Pf  (N = 26) | AZ  (N = 53) | Pf  (N = 55) | AZ  (N = 175) | Pf  (N = 164) | AZ  (N = 145) | Pf  (N = 203) | AZ  (N = 39) | Pf  (N = 55) | AZ  (N = 1) | Pf  (N = 1) |
| Still birth | 2 (33.3) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 1 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| <p10 | 1 (16.7) | 1 (12.5) | 2 (9.1) | 6 (23.1) | 3 (5.7) | 2 (3.6) | 7 (4) | 5 (3) | 2 (1.4) | 12 (5.9) | 1 (2.6) | 0 (0) | 0 (0) | 0 (0) |
| p10-p25 | 0 (0) | 0 (0) | 2 (9.1) | 2 (7.7) | 4 (7.5) | 7 (12.7) | 20 (11.4) | 16 (9.8) | 14 (9.7) | 26 (12.8) | 7 (17.9) | 8 (14.5) | 0 (0) | 0 (0) |
| p25-p50 | 2 (33.3) | 2 (25) | 6 (27.3) | 10 (38.5) | 12 (22.6) | 13 (23.6) | 39 (22.3) | 38 (23.2) | 45 (31) | 53 (26.1) | 10 (25.6) | 11 (20) | 0 (0) | 1 (100) |
| p50-75 | 1 (16.7) | 1 (12.5) | 5 (22.7) | 3 (11.5) | 13 (24.5) | 21 (38.2) | 38 (21.7) | 41 (25) | 43 (29.7) | 49 (24.1) | 14 (35.9) | 23 (41.8) | 1 (100) | 0 (0) |
| p75-p90 | 0 (0) | 1 (12.5) | 2 (9.1) | 3 (11.5) | 8 (15.1) | 4 (7.3) | 50 (28.6) | 41 (25) | 27 (18.6) | 41 (20.2) | 6 (15.4) | 9 (16.4) | 0 (0) | 0 (0) |
| >p90 | 0 (0) | 3 (37.5) | 5 (22.7) | 2 (7.7) | 13 (24.5) | 8 (14.5) | 21 (12) | 23 (14) | 14 (9.7) | 22 (10.8) | 1 (2.6) | 4 (7.3) | 0 (0) | 0 (0) |

Figure 1. Live-birth weight of infants from two groups of maternal SARS-CoV-2 vaccination



Chart, box and whisker chart

Description automatically generated

Figure 2. Live-birth weight percentile of infants from two groups of maternal SARS-CoV-2 vaccination

Chart, box and whisker chart

Description automatically generated