**Table 1.** Clinical characteristics of women with T1D and unaffected women

|  |  |  |  |
| --- | --- | --- | --- |
| **Mother's Clinical Characteristics** | T1D group (n=50) | Control group (n=42) | P-value |
|  |  |  |  |
| Age, mean ± SD | 30.5 ± 4.1 | 32.4 ± 3.7 | 0.01069 |
| Age at delivery (full years), mean ± SD | 30 ± 4 | 32 ± 4 | 0.00758 |
| Ethnicity, Caucasian | 50 (100%) | 42 (100%) | 0.4042 |
| Geographical location, Poland | 50 (100%) | 42 (100%) | 0.4042 |
| Delivery mode |  |  |  |
| Caesarian | 33 (66%) | 20 (47.5%) | 0.2473 |
| Vaginal | 12 (24%) | 17 (40.5%) | 0.1609 |
| Vacuum-assisted vaginal delivery | 5 (10%) | 5 (12%) | 0.7825 |
| Prior C-sections |  |  |  |
| once | 7 (14%) | 5 (12%) | 0.7816 |
| twice | 1 (2%) | 2 (5%) | 0.4649 |
| none | 42 (84%) | 35 (83%) | 0.9722 |
| Preterm (<37 weeks) |  |  |  |
| Yes | 0 (0%) | 0 (0%) | - |
| No | 50 (100%)\* | 42 (100%) | 0.4042 |
| Gestation (weeks), mean ± SD | 38.1 ± 0.7 | 39.2 ± 1.0 | <0.0001 |
| Parity |  |  |  |
| Primiparity | 28 (56%) | 14 (33.5%) | 0.109 |
| Multiparity | 22 (44%) | 27 (64.5%) | 0.1842 |
| NA | 0 (0%) | 1 (2%) | 0.2752 |
| Miscarriages |  |  |  |
| yes | 7 (14%) | 8 (19%) | 0.5503 |
| no | 41 (82%) | 33 (79%) | 0.8551 |
| NA | 2 (4%) | 1 (2%) | 0.6684 |
| Pre-pregnancy BMI, mean ± SD | 23.19 ± 2.95 | 22.46 ± 2.56 | 0.4227 |
| Pre-pregnancy BMI |  |  |  |
| Underweight | 1 (2%) | 1 (2%) | 0.9018 |
| Normal | 35 (70%) | 33 (79%) | 0.6338 |
| Overweight | 13 (26%) | 7 (17%) | 0.3389 |
| Obese | 1 (2%) | 0 (0%) | 0.3594 |
| NA | 0 (0%) | 1 (2%) | 0.2752 |
| Before-delivery BMI, mean ± SD | 28.12 ± 3.75 | 27.46 ± 2.97 | 0.6493 |
| Weight gain (kg), mean ± SD | 13.61 ± 5.34 | 14.00 ± 3.79 | 0.7266 |
| Weight gain\*\* |  |  |  |
| Non-excess | 32 (64%) | 26 (62%) | 0.8997 |
| Excess | 18 (38%) | 15 (36%) | 0.9818 |
| NA | 0 (0%) | 1 (2%) | 0.2752 |
| Energy derived from fat [%] mean ± SD | 30.80 ± 5.09 | 27.79± 4.83 | 0.05131 |
| Energy from saturated fatt acids [%]\*\*\*, mean ± SD | 12.97 ± 2.46 | 11.69 ± 2.59 | 0.07494 |
| Energy derived from carbohydrates [%]\*\*\*, mean ± SD | 50.85 ± 5.33 | 55.47 ± 5.30 | 0.0171 |
| Energy derived from total protein [%]\*\*\*, mean ± SD | 18.35 ± 3.01 | 16.74 ± 1.59 | 0.02962 |
| HbA1c levels control during pregnancy |  |  |  |
| yes | 50 (100%)\*\*\*\* | 0 (0%) | - |
| no | 0 (0%) | 42 (100%) | - |
| Maternal diabetes |  |  |  |
| T1D | 50 (100%) | 0 (0%) | - |
| T2D | 0 (0%) | 0 (0%) | - |
| Gestational | 0 (0%) | 0 (0%) | - |
| None | 0 (0%) | 42 (100%) | - |
| Age at T1D diagnosis, mean ± SD | 17.91 ± 8.21 | NA | - |
| Duration of T1D (years), mean ± SD | 12.56 ± 7.02 | NA | - |
| Diabetes medication (insulin therapy) |  |  |  |
| yes | 50 (100%) | 0 (0%) | - |
| no | 0 (0%) | 42 (100%) | - |
| NA | 0 (0%) | 0 (0%) | - |
| Time of insulin therapy (years), mean ± SD | 12.52 ± 17.09 | NA | - |
| Age at the beginning of insulin therapy (years), mean ± SD | 17.97 ± 8.30 | NA | - |
| Classification of pregestational diabetes (modified P. White classification)\*\* | |  |  |
| Class A | 0 (0%) | NA | - |
| Class B | 18 (36%) | NA | - |
| Class C | 15 (30%) | NA | - |
| Class D | 11 (22%) | NA | - |
| Class R | 5 (10%) | NA | - |
| Class F | 0 (0%) | NA | - |
| Class RF | 1 (2%) | NA | - |
| Class H | 0 (0%) | NA | - |
| Class T | 0 (0%) | NA | - |
| Non-proliferative Retinopathy |  |  |  |
| yes | 5 (10%) | 0 (0%) | 0.04042 |
| no | 45 (90%) | 42 (100%) | 0.6232 |
| NA | 0 (0%) | 0 (0%) | - |
| Proliferative Retinopathy |  |  |  |
| yes | 7 (14%) | 0 (0%) | 0.01531 |
| no | 43 (86%) | 42 (100%) | 0.4865 |
| NA | 0 (0%) | 0 (0%) | - |
| Retinopathy |  |  |  |
| yes | 12 (24%) | 0 (0%) | 0.001499 |
| no | 38 (76%) | 42 (100%) | 0.2188 |
| NA | 0 (0%) | 0 (0%) | - |
| Hypothyroidism |  |  |  |
| yes | 22 (44%) | 10 (23.5%) | 0.1019 |
| no | 28 (56%) | 32 (76.5%) | 0.2323 |
| NA | 0 (0%) | 0 (0%) | - |
| Antibiotics prophylaxy |  |  |  |
| yes | 34 (68%) | 20 (47.5%) | 0.2037 |
| no | 16 (32%) | 22 (52.5%) | 0.1297 |
| Cause of antibiotics prophylaxis\*\*\*\*\* |  |  |  |
| Cesarean section prophylaxis | 28 (80%) | 12 (54%) | 0.4688 |
| Streptococcus agalactiae | 5 (14%) | 5 (23%) | 0.7825 |
| Chorioamnionitis (intra-amniotic infection (IAI) | 0 (0%) | 0 (0%) | - |
| Maternal bacterial endocarditis prophylaxis | 0 (0%) | 0 (0%) | - |
| Premature rupture of membranes prophylaxis | 2 (6%) | 5 (23%) | 0.171 |
| Used Antibiotic\*\*\*\*\*\* |  |  |  |
| cefuroxime | 18 (51.5%) | 7 (30.5%) | 0.07641 |
| ampicillin | 6 (17%) | 4 (17%) | 0.7197 |
| cefazolin | 11 (31.5%) | 10 (43.5%) | 0.8564 |
| clindamycin | 0 (0%) | 1 (4.5%) | 0.2752 |
| cefalexin | 0 (0%) | 1 (4.5%) | 0.2752 |
| Any chronic disease/disorder (excluding T1D)\*\*\*\*\*\*\* |  |  |  |
| yes | 6 (12%) | 1 (0.3%) | 0.0957 |
| no | 44 (88%) | 41 (99.7%) | 0.6326 |
| Hypertension |  |  |  |
| yes | 3 (6%) | 0 (0%) | 0.1124 |
| no | 47 (94%) | 42 (100%) | 0.7707 |
| Gestational hypertension |  |  |  |
| yes | 2 (4%) | 1 (0.3%) | 0.6684 |
| no | 48 (96%) | 41 (99.7%) | 0.9373 |
| Maternal preeclampsia |  |  |  |
| yes | 2 (4%) | 0 (0%) | 0.1949 |
| no | 48 (96%) | 42 (100%) | 0.8468 |
| Supplements \_probiotics before pregnancy (excluding synbiotics) | |  |  |
| yes | 8 (16%) | 3 (7%) | 0.221 |
| no | 32 (64%) | 27 (64%) | 0.9864 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Supplements \_probiotics during pregnancy (excluding synbiotics) | |  |  |
| yes | 4 (8%) | 6 (14%) | 0.3624 |
| no | 36 (72%) | 24 (57%) | 0.3794 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Supplements \_synbiotics before pregnancy |  |  |  |
| yes | 7 (14%) | 13 (31%) | 0.08237 |
| no | 33 (66%) | 17 (40%) | 0.0981 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Supplements \_synbiotics during pregnancy |  |  |  |
| yes | 2 (4%) | 17 (40%) | 0.0001257 |
| no | 38 (76%) | 13 (31%) | 0.003844 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Supplements \_probiotics before pregnancy (including synbiotics) | |  |  |
| yes | 12 (24%) | 15 (35.5%) | 0.3016 |
| no | 28 (56%) | 15 (35.5%) | 0.1563 |
| NA | 10 (20%) | 12 (29%) |  |
| Supplements \_probiotics during pregnancy (including synbiotics) | |  |  |
| yes | 5 (10%) | 29 (69%) | <0.00001 |
| no | 35 (70%) | 1 (2%) | <0.00001 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Probiotics in food before pregnancy\*\*\*\*\*\*\*\* |  |  |  |
| yes | 39 (78%) | 27 (64%) | 0.4392 |
| no | 1 (2%) | 3 (7%) | 0.2386 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Probiotics in food during pregnancy\*\*\*\*\*\*\*\* |  |  |  |
| yes | 39 (78%) | 30 (71%) | 0.717 |
| no | 1 (2%) | 0 (0%) | 0.3594 |
| NA | 10 (20%) | 12 (29%) | 0.4023 |
| Proceeded samples\*\*\*\*\*\*\*\*\* | 50 (100%) | 41 (98%) | 0.9089 |

\*one delivery at 36 weeks and 6 days of pregnancy

\*\* according to Wender-Ożegowska E, Bomba-Opoń D, et al. Standards of Polish Society of Gynecologists and Obstetricians in management of women with diabetes. Ginekol Pol. 2018;89(6):341-350. doi: 10.5603/GP.a2018.0059.

\*\*\*counting based on 24-hours dietetic recall for 7-days received from 33 T1D patients and 14 controls

\*\*\*\*HbA1c measurement in each of the three trimesters of pregnancy

\*\*\*\*\*in one T1D patient and two controls there were more than one cause of using the antibiotics profilaxy

\*\*\*\*\*\*in one T1D patient and three controls more than one antibiotic was administrated

\*\*\*\*\*\*\*as chronic disease: hypertension, asthma, epilepsy

\*\*\*\*\*\*\*\*yoghurts, kefirs, acidophilic milk, bifidus milk, curdled milk, buttermilk, probiotic drinks, cottage cheese, rennet cheese, blue cheese, probiotic bran, pickled products

\*\*\*\*\*\*\*\*\*due to incomplete collection of biological samples sets from investigated individuals

**Table 2.** Clinical characteristics of neonates delivered by women with T1D and unaffected

|  |  |  |  |
| --- | --- | --- | --- |
| **Neonate's Clinical Characteristics** | T1D group (n=50) | Control group (n=42) | p-value |
|  |  |  |  |
| Sex |  |  |  |
| male | 27 (54%) | 24 (57%) | 0.887 |
| female | 23 (46%) | 18 (43%) | 0.7809 |
| Birth weight |  |  |  |
| SGA | 4 (8%) | 0 (0%) | 0.06454 |
| AGA | 32 (64%) | 39 (93%) | 0.1341 |
| LGA | 14 (28%) | 3 (7%) | 0.01873 |
| Birth weight (kg), mean ± SD | 3552.80 ± 524.26 | 3405.45 ± 395.51 | 0.09471 |
| Feeding methods |  |  |  |
| breast milk | 7 (14%) | 40 (95%) | <0.00001 |
| formula | 0 (0%) | 2 (5%) | 0.126 |
| mixed | 41 (82%) | 0 (0%) | <0.00001 |
| NA | 2 (4%) | 0 (0%) | 0.1912 |
| Day of life of introducing formula into the diet, mean ± SD\* |  | 1 ± 0 |  |
| Control of postnatal glucose homeostasis |  |  |  |
| yes | 49 (98%) | 0 (0%) | <0.00001 |
| no | 1 (2%) | 42 (100%) | <0.00001 |
| Postnatal glucose level (mg/dl), mean ± SD\* | 50.40 ± 19.01 | NA | - |
| Proceeded samples\*\* | 48 (96%) | 41 (98%) | - |

\* measurement in first hour of life

\*\* due to incomplete collection of biological samples sets from investigated individuals