

EP16.44    **Underlying etiologies and clinical characteristics of polyhydramnios cases**

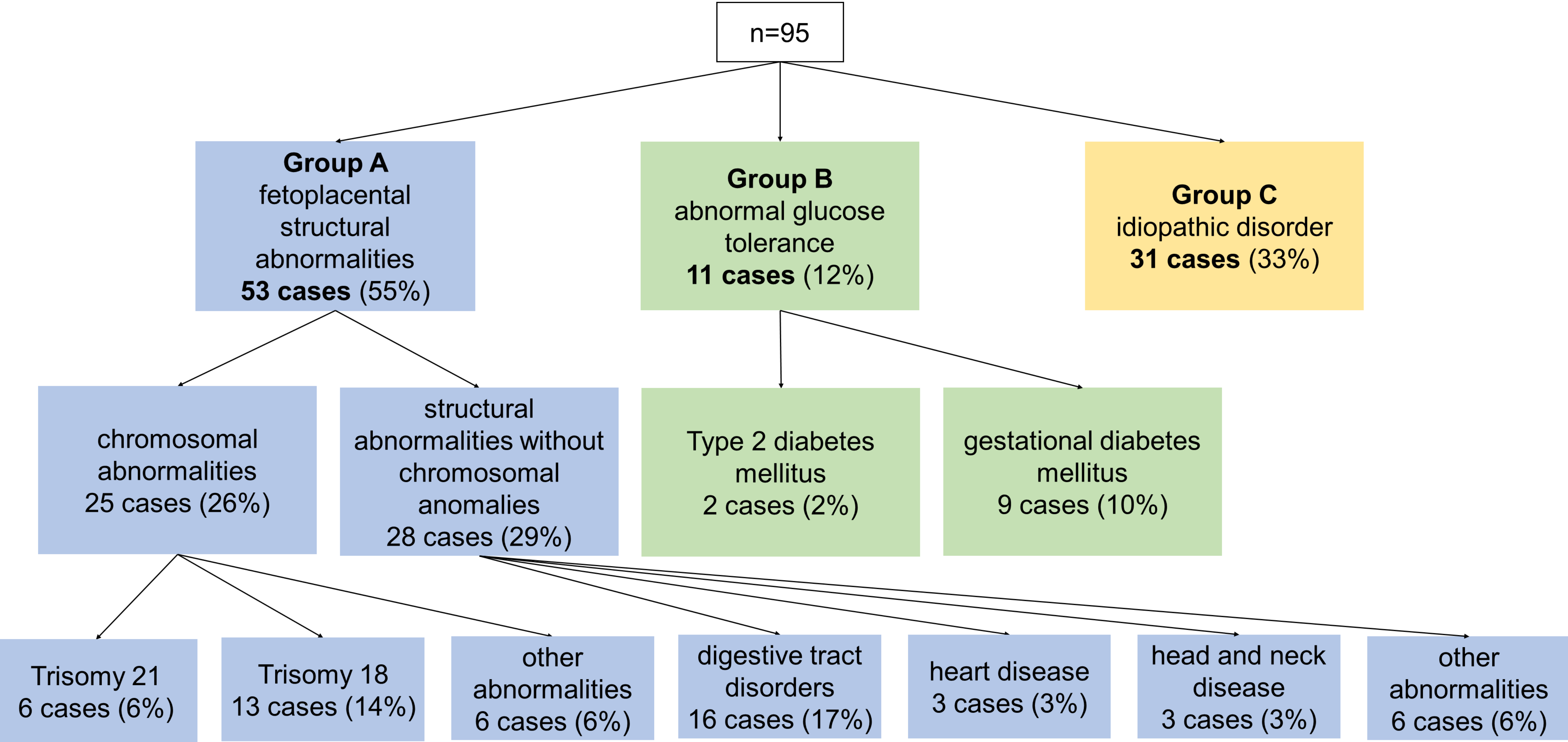
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**Objective:** Some of the known causes of polyhydramnios include chromosomal abnormalities, fetoplacental structural abnormalities, and abnormal glucose tolerance of mothers; however, several cases are idiopathic with unknown causes, making management challenging during pregnancy. In this study, we elucidate the clinical characteristics of polyhydramnios cases according to their underlying etiologies.

**Methods:** We included patients with single pregnancies diagnosed with polyhydramnios (maximal vertical pocket ≥8 or amniotic fluid index [AFI] ≥24) and managed in our hospital between January 2013 and August 2024. Maternal and neonatal data were retrospectively reviewed. Statistical analyses included chi-square test and Kruskal-Wallis test with Bonferroni correction.

**Results:**



|                                           | Group A<br>fetoplacental structural<br>abnormalities<br>53 cases (55%) | Group B<br>abnormal glucose<br>tolerance<br>11 cases (12%) | Group C<br>idiopathic disorder<br>31 cases (33%) | <i>P</i>         |
|-------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------|------------------|
| Maternal characteristics                  |                                                                        |                                                            |                                                  |                  |
| Maternal age                              | 32 (20-44)                                                             | 35 (25-41)                                                 | 33 (19-39)                                       | 0.399            |
| Primiparity                               | 24 (45%)                                                               | 4 (36%)                                                    | 19 (61%)                                         | 0.243            |
| Gestational week at delivery              | 36 (26-40) <b>c</b>                                                    | 38 (32-40)                                                 | 38 (35-41)                                       | <b>0.001</b>     |
| Preterm birth                             | 28 (53%) <b>b, c</b>                                                   | 1 (9%)                                                     | 6 (19%)                                          | <b>0.001</b>     |
| Vaginal delivery                          | 28 (53%)                                                               | 5 (45%)                                                    | 17 (55%)                                         | 0.765            |
| Maternal antenatal steroid administration | 11 (35%)                                                               | 2 (18%)                                                    | 1 (3%)                                           | 0.083            |
| Fetal growth restriction                  | 22 (42%) <b>b, c</b>                                                   | 0 (0%)                                                     | 2 (6%)                                           | <b>0.001</b>     |
| Tocolysis                                 | 28 (53%)                                                               | 3 (27%)                                                    | 11 (35%)                                         | 0.150            |
| Amnioreduction                            | 24 (45%) <b>c</b>                                                      | 1 (9%)                                                     | 4 (13%)                                          | <b>0.002</b>     |
| Maximum MVP                               | 12 (6-20)                                                              | 10 (8-18)                                                  | 11 (7-21)                                        | 0.161            |
| Maximum AFI                               | 36 (22-77) <b>c</b>                                                    | 30 (20-50)                                                 | 33 (21-71)                                       | <b>0.026</b>     |
| AFI>38                                    | 23 (43%) <b>C</b>                                                      | 1 (9%)                                                     | 4 (13%)                                          | <b>0.004</b>     |
| Neonatal characteristics                  |                                                                        |                                                            |                                                  |                  |
| Birth weight (g)                          | 2081 (734-3918) <b>b, c</b>                                            | 3204 (2188-3648)                                           | 3116 (1257-3876)                                 | <b>&lt;0.001</b> |
| Small for gestational age                 | 20 (38%) <b>b, c</b>                                                   | 0 (0%)                                                     | 1 (3%)                                           | <b>0.001</b>     |
| 5-minute Apgar score                      | 8 (1-10) <b>b, c</b>                                                   | 9 (7-9)                                                    | 9 (6-9)                                          | <b>0.001</b>     |
| Umbilical artery pH                       | 7.300 (6.938-7.444)                                                    | 7.320 (7.228-7.344)                                        | 7.290 (7.057-7.384)                              | 0.284            |
| NICU admission                            | 43 (81%) <b>b, c</b>                                                   | 3 (27%)                                                    | 12 (39%)                                         | <b>0.001</b>     |
| Intrauterine fetal death                  | 3 (6%)                                                                 | 0 (0%)                                                     | 1 (3%)                                           | 0.662            |
| Perinatal death                           | 9 (17%) <b>c</b>                                                       | 0 (0%)                                                     | 1 (3%)                                           | <b>0.002</b>     |

b : A vs B *P*<0.05    c : A vs C *P*<0.05

**Conclusion:** Approximately half of the fetoplacental structural abnormality cases were associated with chromosomal abnormalities, indicating the need to consider chromosomal testing during prenatal evaluation. Cases complicated by fetal growth restriction, an AFI > 38 cm, or requiring amnioreduction were significantly associated with fetoplacental structural abnormalities, highlighting the importance of careful monitoring and management in such pregnancies.