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Ductus venosus agenesis and fetal malformations: what can we expect? A systematic review of the literature

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Objective

The ductus venosus agenesis (DVA) is a rare condition with a variable prognosis, that relies partly on the presence of associated conditions. The purpose of our study was to analyze the literature regarding the postnatal outcome of fetuses with DVA, associated with fetal malformations, in order to discuss the best management options for couples.

Methods

We performed a systematic review of the literature of MEDLINE and SCOPUS electronic databases in a 25-year period from 1992 to September 2017 according to the PRISMA Statement. The following relevant medical subject heading (MeSH) terms and keywords were used: ductus venosus, agenesis, absent, absence, missing and lack. The studies were restricted to English language.

Results

We found 340 cases of DVA associated with fetal abnormalities. The most common chromosomal abnormalities were: monosomy X (12/48. 25%), trisomy 21 (11/48, 22. 9%) and trisomy 18 (6/48, 12. 5%). From the 340 cases with DVA, in 31 cases the umbilical venous shunt type was not reported. 60. 8% (188/309) of the fetuses had an extrahepatic umbilical venous drainage while 39. 2% (121/309) presented an intrahepatic connection. The DVA was associated in 71 cases (23. 0%) with cardiac abnormalities, in 82 cases (26. 5%) with extracardiac abnormalities and in 85 cases (27. 5%) with both cardiac and extracardiac abnormalities.

Conclusion

DVA associated with both cardiac and extracardiac malformations may confer a poorer fetal outcome, a clinically relevant fact that should clarify what can be expected from this entity and help prenatal counseling.