**Introduction:** The challenges met everyday in prenatal diagnosis to accurately diagnose a syndrome or a sequence or an association was the drive behind this work. The aim of this work was to develop an efficient, user friendly, time saving computer software program specified with prenatal diagnosis, based solely on ultrasound findings provided by the sonographer. The system provides differential diagnosis with detailed information on each diagnosis, assisting the care provider in decision making and patient counseling.

**Methodology:** SONOCAD (Sonographyic Computer Assisted Diagnosis) program was developed in 4 phases. Phase I, data gathering, through a Data Gathering Tool (DGT) (a software developed by our IT team to help build a huge database containing information of almost all prenatally diagnosed syndromes mentioned in the literature based solely on ultrasound findings). Phase II was the software development phase, in which the source code of the software was developed using a platform that can be compatible with Windows operating systems and android based operating systems to be applied later on smart phones, tablets and so on.

**Phase III and Phase IV (testing phases)**
SonoCAD was tested by providing 20 case scenarios of 20 different syndromes designed by a fetal medicine consultant, and in all 20 cases SonoCAD generated the correct diagnosis as the 1st choice. We also tested it against the already available website Phenotip.com, by entering 55 syndromes with known diagnosis from fetus.net cases, into SonoCAD and phenotip and compared the outcome. The results showed that SonoCAD had the correct diagnosis in 92% of the syndromes in comparison with a 53.3% in phenotip.com. In 57.3% of the syndromes SonoCAD had a better performance than Phenotip.com either by having the correct diagnosis while pheotip.com did not generate a diagnosis or by having the correct diagnosis at a higher position on the list of differential diagnosis than phenotip.com.

**Conclusion:** SonoCAD is a new software with the capability of assisting in the prenatal diagnosis of fetal syndromes based only on ultrasound findings detected in the fetus.
- It is not internet dependent, and have a better classifier capabilities and a better performance than the already available similar internet dependent website.
- It has an updatable database system so that new syndromes and new findings can be added to the already available database.