

Appendix 2: QUADAS (quality assessment of diagnostic accuracy studies) criteria¹³ used to assess the methodologic quality of studies of uterine artery Doppler ultrasonography used to predict pre-eclampsia and intrauterine growth restriction

QUADAS question	Study characteristics and methods required to meet criterion
Was the spectrum of patients representative of the patients who will receive the test in practice? (spectrum bias)	Pregnant women, consecutively recruited; study has prospective design
Were selection criteria clearly described? (selection bias)	Information is available on at least 5 of the following factors: chronic hypertension, diabetes mellitus, parity, single/multiple pregnancies, previous pre-eclampsia or intrauterine growth restriction, and age
Is the reference standard likely to correctly classify the target condition?	<ul style="list-style-type: none"> Pre-eclampsia: systolic blood pressure ≥ 140 mm Hg or diastolic blood pressure ≥ 90 mm Hg plus proteinuria measured as ≥ 0.3 g protein in 24-hour urine collection or dipstick test result $\geq 1+$ (equivalent to 30 mg/dL in a single urine sample) Superimposed pre-eclampsia: proteinuria measured as ≥ 0.3 g of protein in 24-hour urine collection or dipstick result $\geq 1+$ after 20 weeks of gestation in patients with chronic hypertension Severe pre-eclampsia: systolic blood pressure ≥ 160 mm Hg or diastolic blood pressure ≥ 110 mmHg, plus proteinuria measured as ≥ 2.0 g protein in 24-hour urine collection or dipstick test result $\geq 3+$ Intrauterine growth restriction: birth weight below 10th centile adjusted for gestational age and based on local population values Severe intrauterine growth restriction: birth weight below fifth or third centile
Is the time period between reference standard and index test short enough to be reasonably sure that the target condition did not change between the 2 tests? (disease progression bias)	Not applicable
Did the whole sample, or a random selection of the sample, receive verification using a reference standard of diagnosis? (partial verification bias)	All patients or a random selection received verification with reference standard (even if reference standard was not the same for all patients)
Did patients receive the same reference standard regardless of index test result? (differential verification bias)	All patients received same reference test (this is likely because the index test is noninvasive)
Was the reference standard independent of the index test (i.e., the index test did not form part of the reference standard)? (incorporation bias)	The results of the index test are not incorporated into the definition of pre-eclampsia or intrauterine growth restriction
Was the execution of the index test described in sufficient detail to permit replication of the test?	Type of Doppler (e.g., colour wave, pulsed wave), site of measurement, exact index test and cutoff level, and transvaginal or transabdominal route are described
Was the execution of the reference standard described in sufficient detail to permit its replication?	<p>Description includes:</p> <ul style="list-style-type: none"> Blood pressure: instrument, position of patient, Korotkoff sound for diastolic blood pressure Proteinuria: 24-hour urine collection or use of dipstick test with cutoff point Birth weight: timing of measurement, scales used, whether baby clothed or not Neonatal ponderal index: description of birth weight and length measurement as above Skin-fold thickness: description of site of measurement, instrument used and timing of measurement Mid-arm or head circumference: as for skin-fold thickness
Were the index test results interpreted without knowledge of the results of the reference standard? (review bias)	Always fulfilled; reference test results were not available when index test (Doppler) performed (prediction)
Were the reference standard results interpreted without knowledge of the results of the index test? (review bias)	Relevant statement is included in text (e.g., "Assessors were blind to Doppler results")
Were the same clinical data available when tests results were interpreted as would be available when the test is used in practice?	Any information about the patient obtained by direct observation (age, symptoms, body mass index) normally available when the test is interpreted in practice was also available when the test was interpreted in the study, or data unavailable in practice also unavailable during interpretation
Were uninterpretable/intermediate test results reported?	All test results are reported, including uninterpretable and intermediate results
Were withdrawals from the study explained?	It is clear what happened to all patients in study (e.g., flow diagram [follow-up])
Supplementary question	
Was there any preventive intervention?	After uterine artery Doppler ultrasonography, patients received any of the following: acetylsalicylic acid, low-molecular-weight heparin, vitamin C or E, antihypertensive medication, saline infusion, oxygen