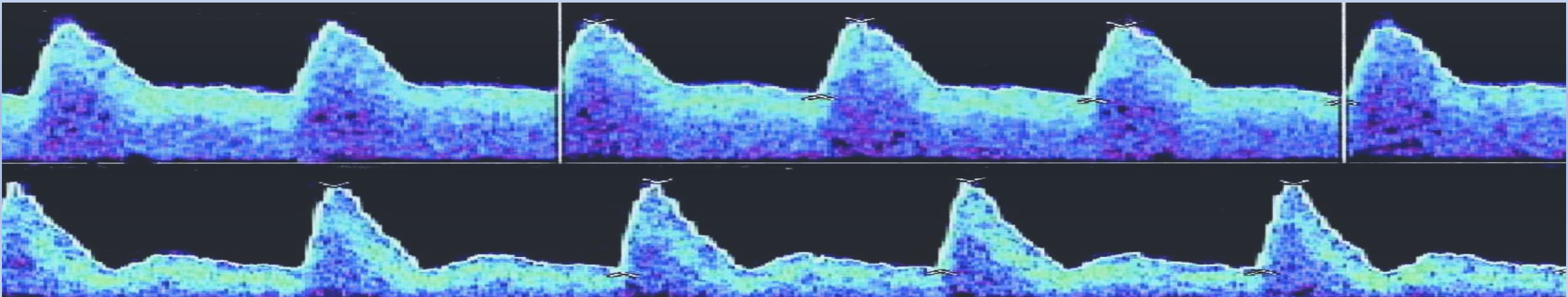




The effects of unilateral uterine artery notch detected at 24th gestational weeks on perinatal outcomes in low risk pregnancies

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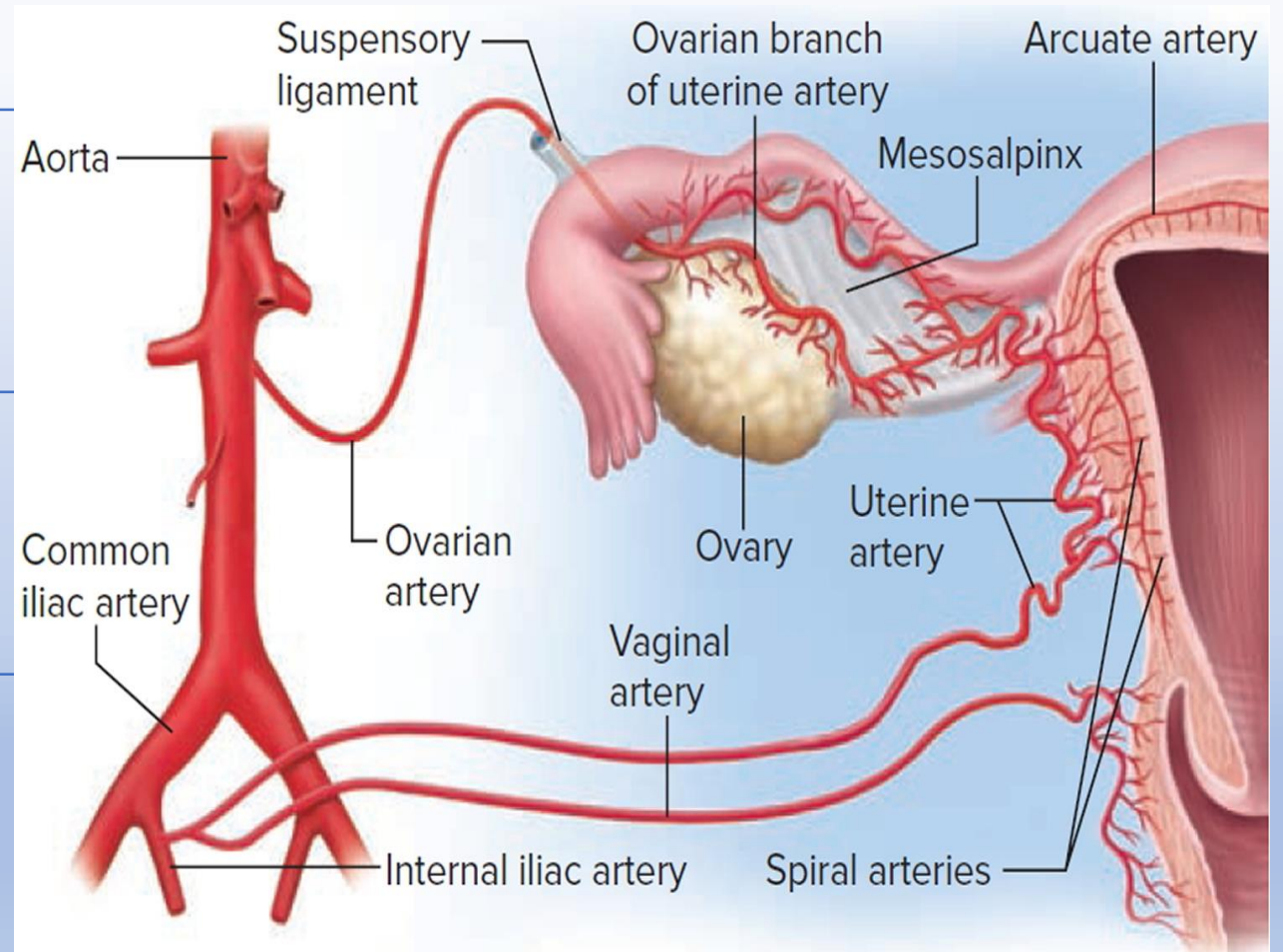
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Uterine Artery(UA)

Origin: Internal iliac artery

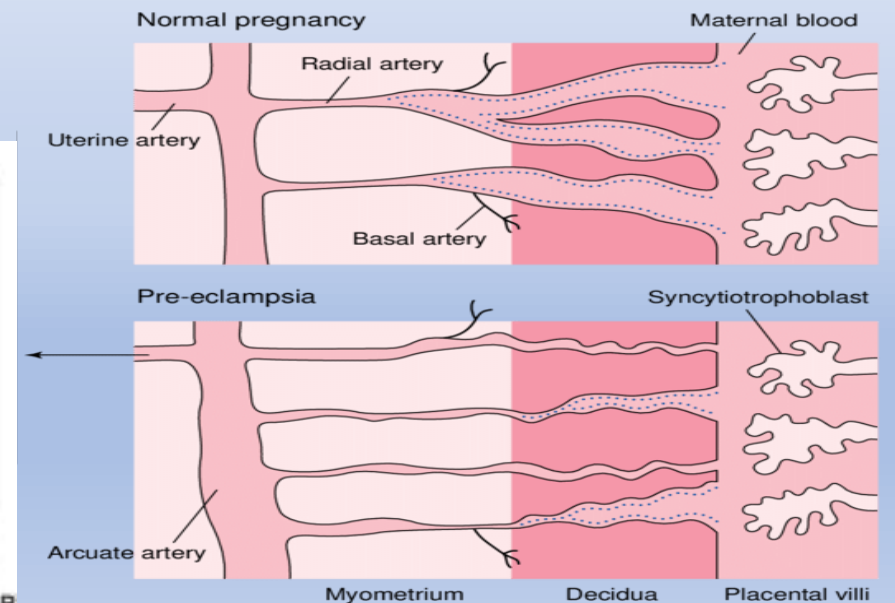
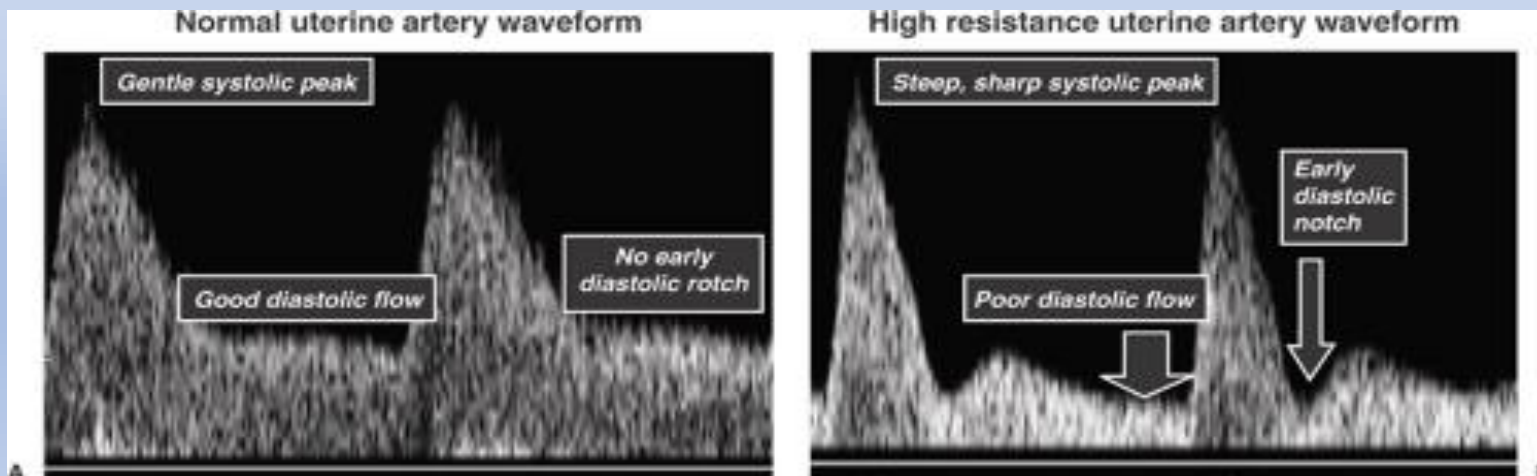
Branches: descending branch, ascending branch → Arcuate artery, spiral artery.

Supplies: Uterus, cervix, vagina, ovaries



Uterine artery notch

- Abnormal uterine waveforms or the persistence of diastolic notch after 24 weeks of gestation is associated with secondarily **insufficient trophoblast invasion of the spiral arteries**

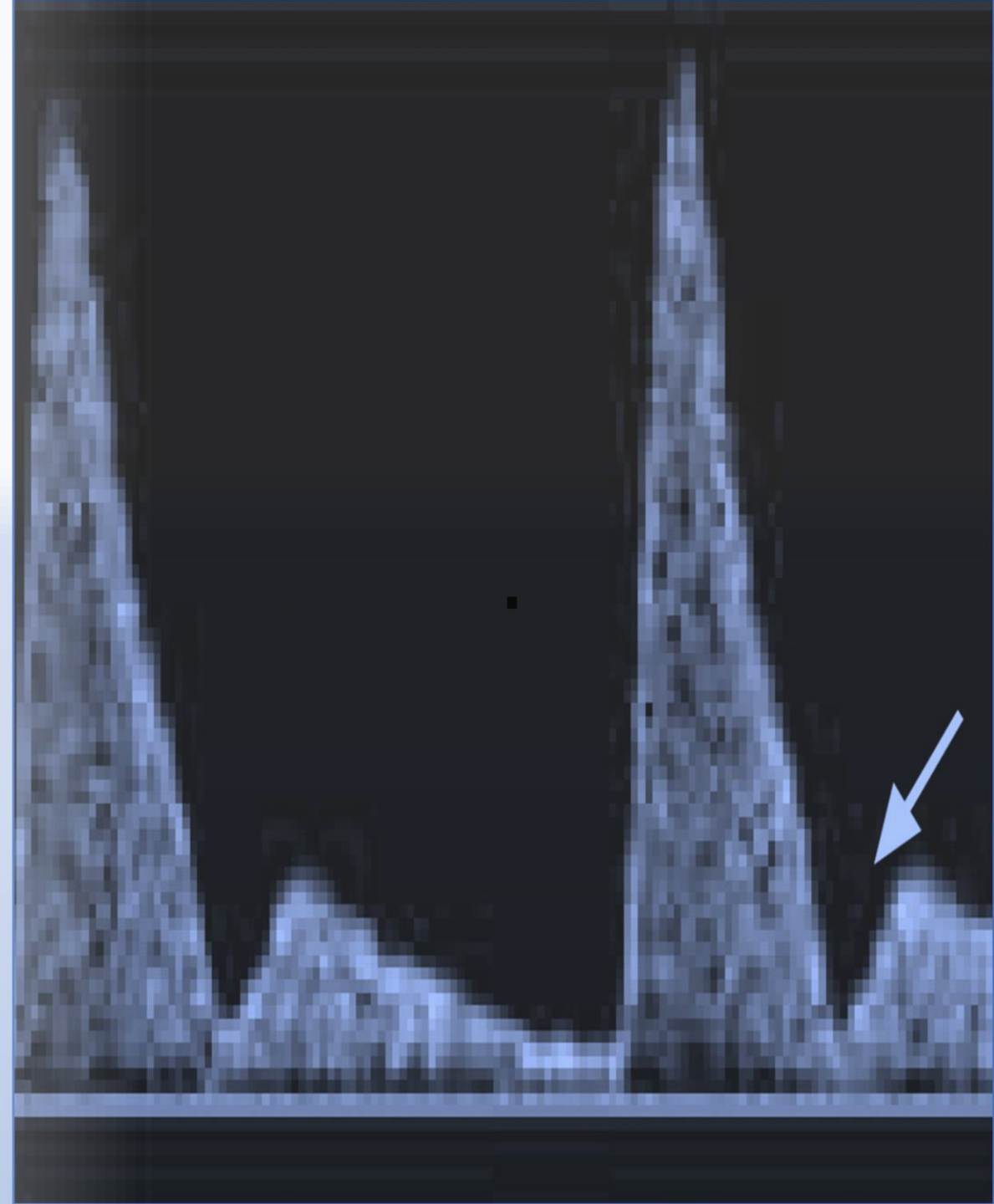


What is on literature ?

- Studies in the last three decades have confirmed the **association between increased blood flow resistance in both uterine arteries** (bilateral uterine artery notch) and a higher risk of the consequent development of **pre-eclampsia, intrauterine growth restriction, or SGA**
- Paucity of data regarding the prognostic value of **unilateral uterine artery notch**.

Aim of our study

- We aimed to assess the effects of unilateral uterine artery notch detected at 24 gestational weeks on perinatal outcomes in low risk pregnancies



Methods

- This is a retrospective analysis of the data obtained from singleton low-risk pregnancies **with a unilateral uterine artery notch detected at 24 weeks of gestation** and pregnancies without a uterine artery notch of the same gestational age gathered from Bezmialem Vakif University Hospital.
- The main outcome measure was **adverse pregnancy outcomes**, defined as any case of **preeclampsia, small for gestational age, stillbirth, or early neonatal death.**

Gathered data

Demographic data:

Age, body mass index, gravida ,parite,
smoking

Perinatal data:

birth weight, birth week, presence or
absence of intrauterine growth retardation,
preeclampsia, preterm birth, and the mode
of delivery, Ph, base deficit, APGAR scores,
NICU admission rate, and duration of stay in
the intensive care unit (ICU)

Result

A total of 162 patients enrolled in the study, (n = 35) of which were detected with a unilateral UA notch(study) and (n = 127) patients with normal UA (control). Baseline demographical data was compared in table 1. The mean ages of the study and control groups were 26 (19–34) vs 29(19–44) , respectively (p= 0.001). The mean BMI of the study and control group were (25.7 ±4.15 vs. 26.05 ±3.88, respectively, p = 0.646). Mean z score was (0.31±0.85 vs 0.10±0.96, respectively p=0.259), prevalence of preterm birth was (14.3% vs 7.1% respectively p=0.185) and preeclampsia was (2.9% vs 1.6% respectively p=0.259) (table 2) which were not remarkable. **The presence of unilateral uterine arterial notching is not associated with a increased risk of adverse pregnancy outcome. There was no correlation between intrauterine growth retardation(IUGR) and the unilateral uterine artery notch.** In logistic regression analysis, unilateral uterine artery notch was not found to be an independent risk factor for any of the observed postnatal outcome measures. (table 3)

	Notch(n=35)	control(n=127)	P value
Age	26(19-34)	29(19-44)	P<0.001
BMI(kg/m²)	25.7 ± 4.15	26.05 ± 3.88	0.646
Gravida	1(1-3)	2(1-7)	0.001
Parity	0 (0-1)	0 (0-4)	0.002
IVF	0(0.0%)	2(100.0%)	1.000
Smoking	27.3%	24.3%	0.844

Table 1 baseline demographical data.

IVF: in vitro fertilization

BMI: body mass index

Table 2: perinatal result of unilateral uterine artery notch in low risk pregnancies

- ICU: intensive care unit
- PTB: preterm birth

	Notch(n=35)	Control(n=127)	P-value
Gestational age at birth	271 (175-288)	274 (232-294)	0.191
Birth weight	3100 (550-3950)	3350 (1680-4660)	0.008
Z score	0.31±0.85	0.10±0.96	0.259
Pre-eclampsia	1(2.9%)	2(1.6%)	0.252
PTB< 37 weeks	5(14.3%)	9(7.1%)	0.185
PTB <34weeks	1(2.9%)	1(0.8%)	0.386
PTB <27weeks	1(2.9%)	0(0.0%)	0.216
Neonatal outcome			
ICU admission after birth	5(14.3%)	15(11.8%)	0.772
C-section rate	22(62.8%)	82(64.8%)	0.852
Ph	7.3250(7.25-7.50)	7.3000(0.73-7.50)	0.047
Base deficit	-2.200(-7.7-9.09)	-2.100(-23.0-4.2)	0.878
Apgar 1	9(4-10)	9(6-10)	0.403
Apgar 5	10 (7-19)	10 (8-10)	0.838

Logistic regression

In logistic regression analysis, unilateral uterine artery nocth was not found to be an independent risk factor for any of the observed postnatal outcome measures. (table 3)

	Sig.	Exp(B)	Lower	Upper
Preeclampsia	0.464	0.314	0.014	6.993
IUGR	0.781		-0.327	0.434
Preterm <37 week	0.226	2.265	0.603	8.506

Table 3 logistic regression analysis.
IUGR: Intrauterin growth restriction

Conclusion

Unilateral uterine notch at 24 weeks in low risk pregnancies is not associated with abnormal perinatal outcome.

Thank you