

Workshop

Smoking in Coulored Pregnant Women

MRC

5 February 2004

The Effects of Smoking in Coloured Pregnant
Women and their Infants in Cape Town

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Smoking and pregnancy

- 1.2 billion cigarette smokers
- About 5 million people die each year
- 2020 – 8.4 million people will die each year
- This is more than from any other single disease
- Two-thirds of these deaths occur in developing countries
- Smoking is the leading cause of preventable death in the USA

Smoking and pregnancy

- Smoke from tobacco in cigarettes contains over 4000 chemicals
- Including at least 60 known carcinogens
- Nicotine and carbon monoxide
- Both interfere with cell development
- Nicotine rapidly crosses the pulmonary membrane
- Is delivered as a bolus to the brain within seconds

Health effects outside pregnancy

- Heart disease
- Lung cancer
- Atherosclerotic vascular disease
- Laryngeal, esophageal and oral cancer
- Chronic obstructive pulmonary disease
- Asthma
- Respiratory infection

Effects on pregnancy

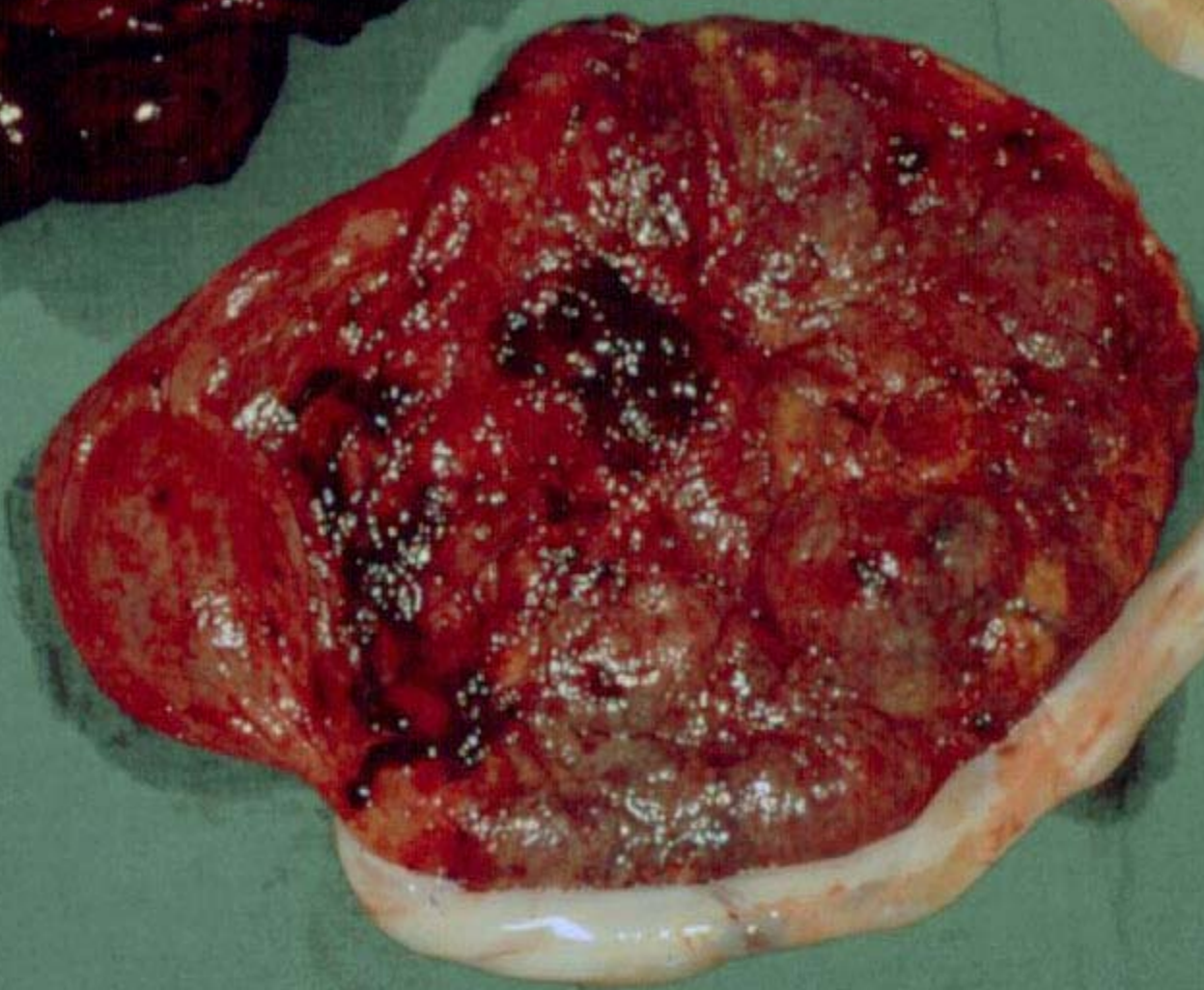
- Intrauterine growth restriction
- Preterm labour
- Abruptio placentae
- Placenta praevia
- Preterm rupture of membranes
- Ectopic pregnancy
- Increased morbidity and mortality

Environmental smoke and pregnancy

- Low birth weight
- SGA infants
- Infant respiratory diseases
- Sudden infant death syndrome

Placental effects

- Nicotine and carbon monoxide
- Decrease availability of oxygen
- Thickening of trophoblastic membrane
- Hypertrophy
- Calcification



Effects of smoking during pregnancy – five meta-analyses

- Abruptio placentae
- OR 1.62 (95 % CI 1.46 – 1.77)
- Placenta histologically evaluated
- OR 2.42 (95% CI 1.53 – 3.31)

Castles et al 1999

Smoking, pre-eclampsia and abruptio placentae

- Reduces mild and severe pre-eclampsia (RR 0.6 and 0.5 respectively)
- Increases perinatal mortality rate (24 to 36 per 1000)
- Increases frequency of abruptio placentae (31 to 67 per 1000)
- SGA infants (28 % to 68 %)

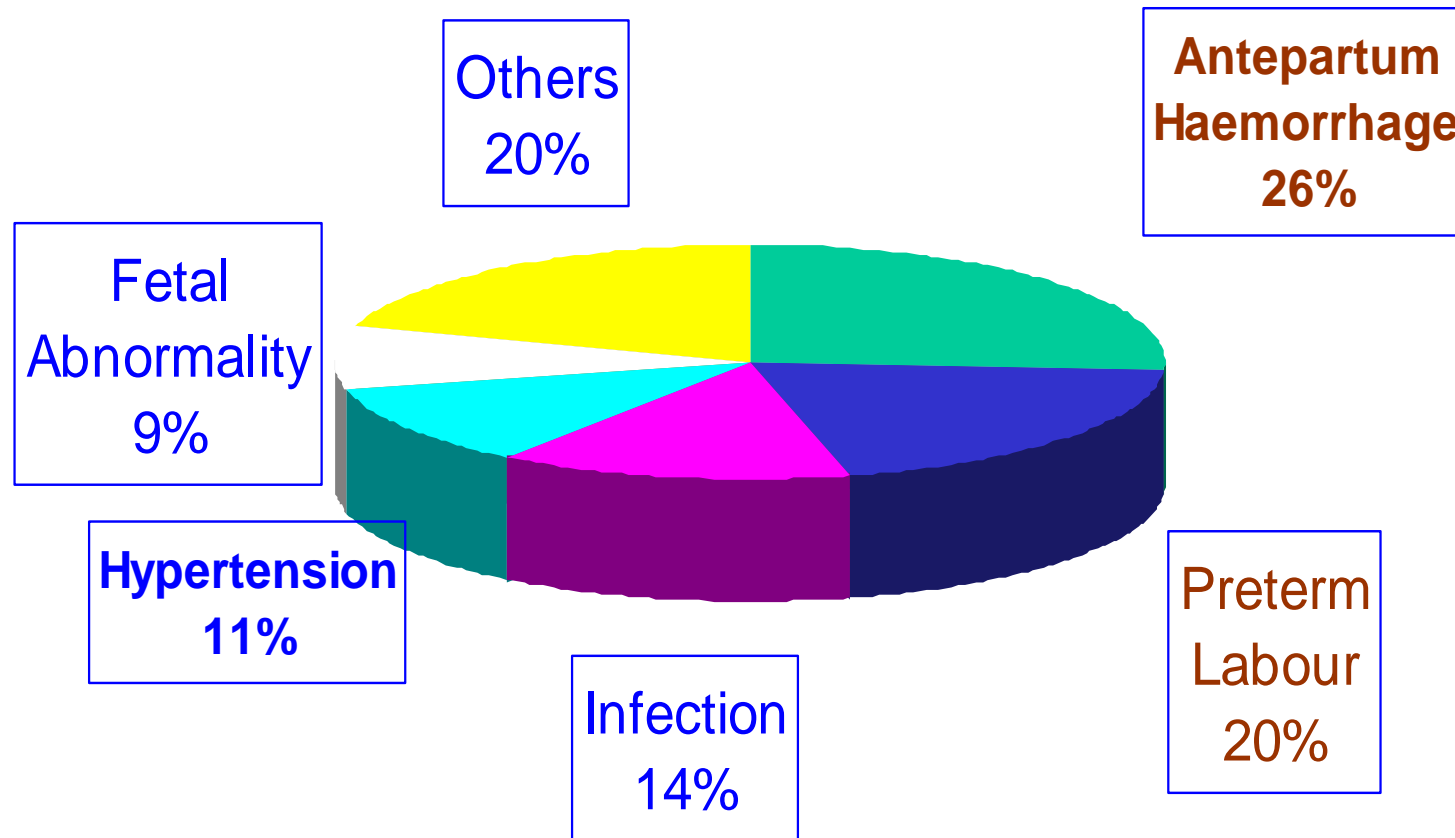
Smoking and abruptio placentae – local experience

- Brink & Odendaal – case control study - 1987
90 cases and controls
OR 2.09 (95 % CI 1.0 – 4.37)
- Odendaal et al. – descriptive study 2001
819 mothers
39 % smoked
OR 4.01 (95 % CI 1.15 – 15.31)

Smoking and abruptio placentae – local experience

- Small-for-gestational age
OR 1.49 (95 % CI 1.01 – 2.20)
- Birth weights 2 682 g vs. 2 938 g
($P < 0.00001$)
- Gestational age 37 weeks vs. 37.7 weeks
($P < 0.0098$)

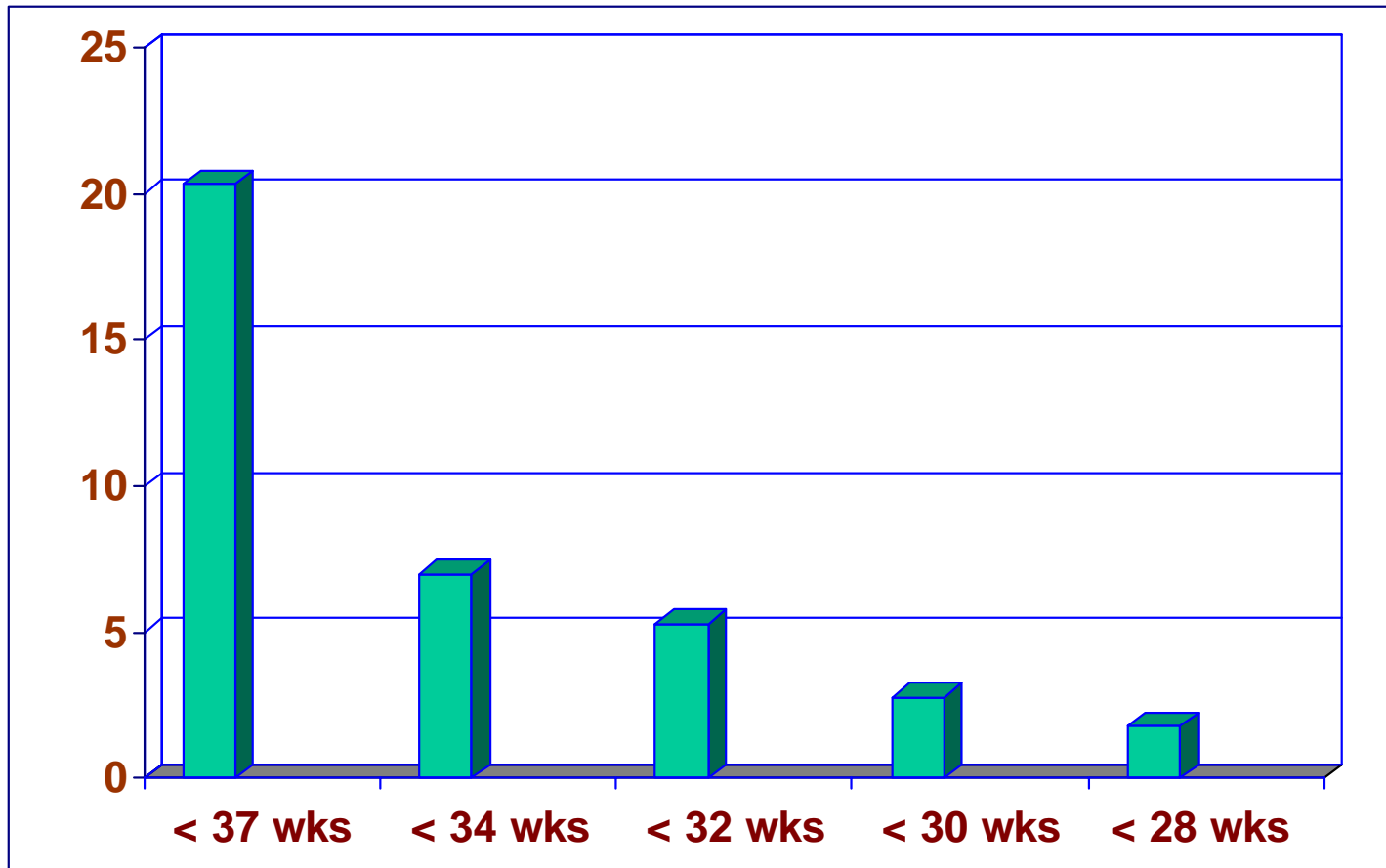
Causes of perinatally related wastage



Alcohol and abruptio placentae

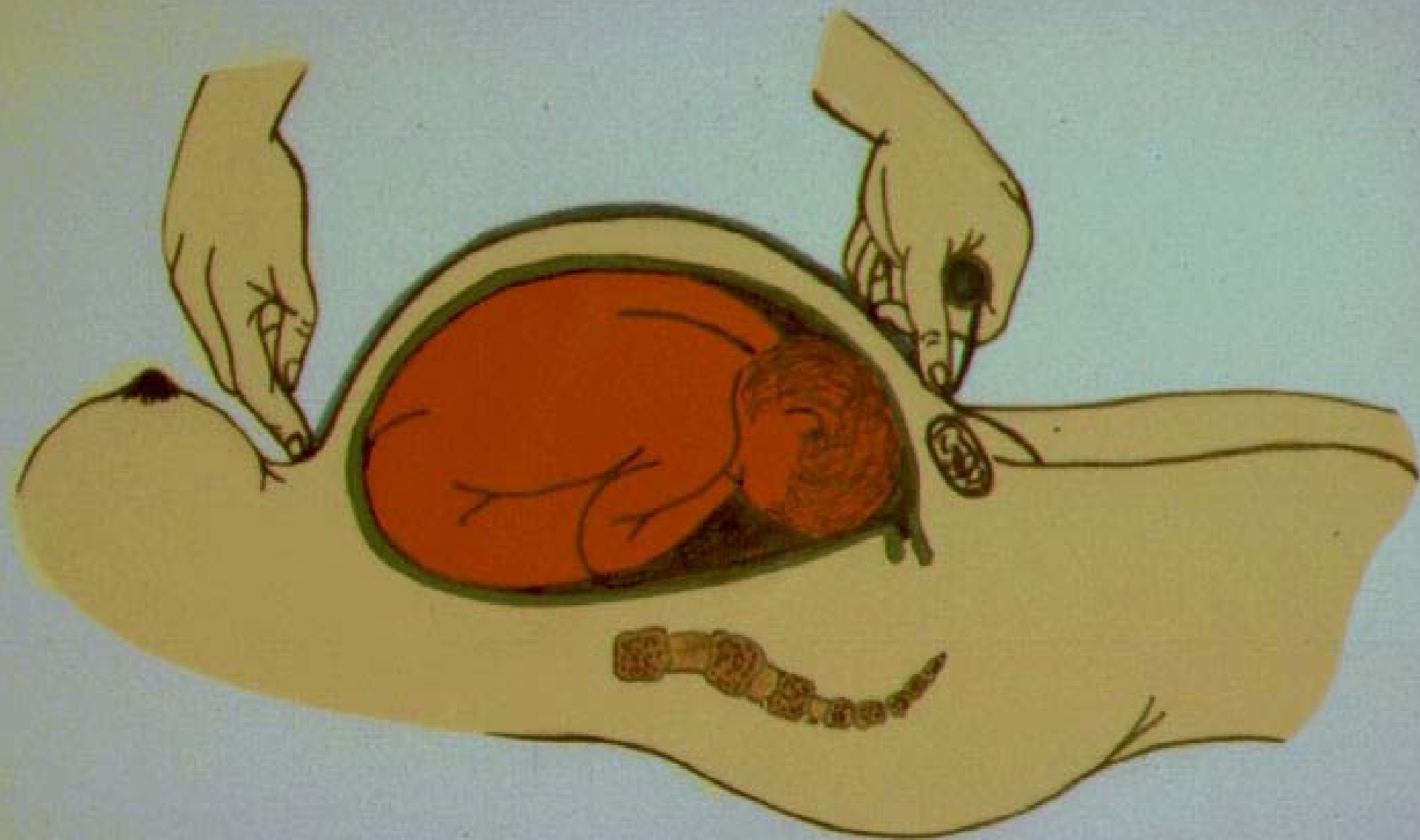
	Abruption	Low-risk
N	23	99
Alcohol use	9 (39 %)	12 (12 %)
	p=0.004	

Preterm deliveries in Tygerberg



Maternal cigarette smoking and abruptio placentae

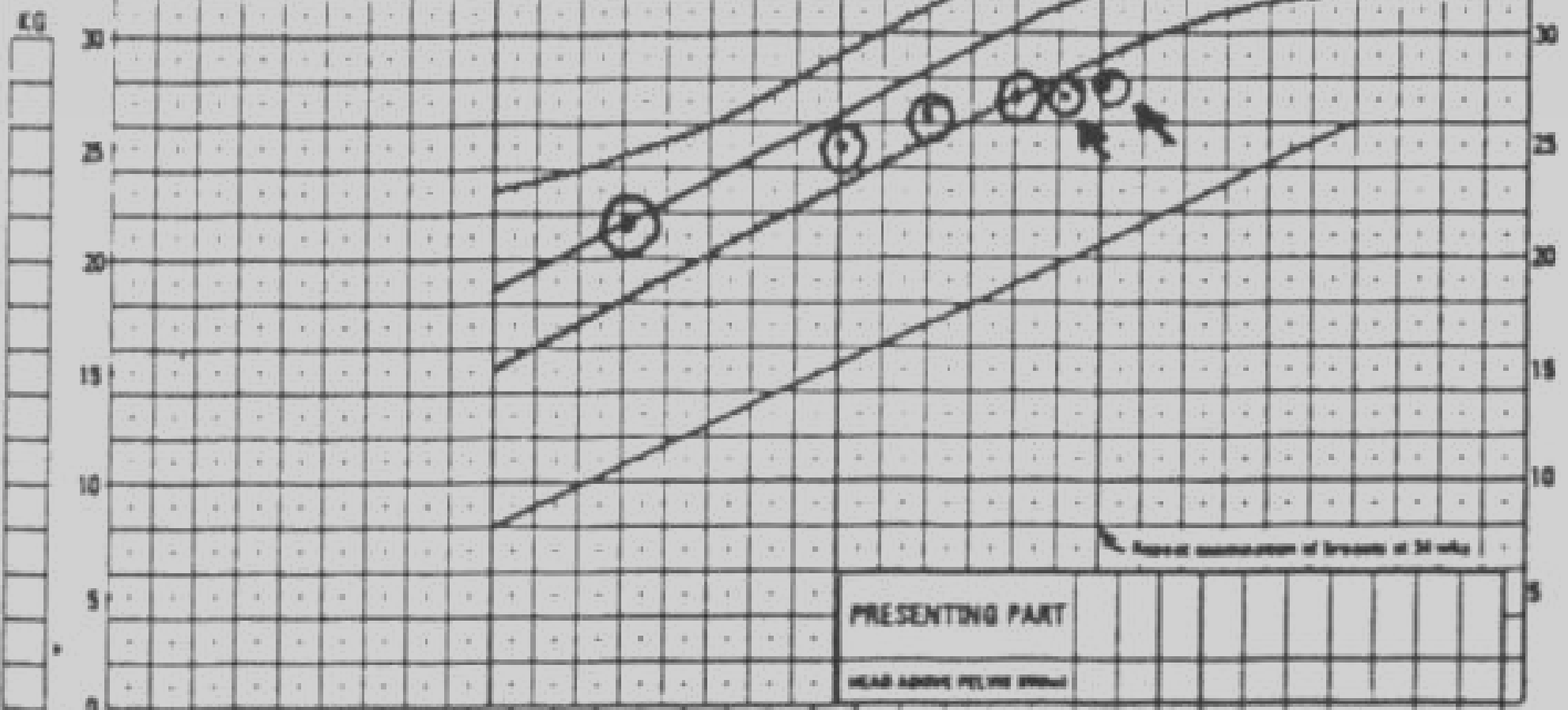
	Smokers N=319	Non-smokers N=500	P
Duration (wks)	37.0	37.7	0.0098
Delivery < 37 wks	36 %	24 %	0.0004
Birth weight (g)	2682	2938	0.00001
SGA	20 %	15 %	0.048
Abruptio placentae	3.1 %	0.8 %	0.0252
	Odds ratio 4.01 (95% CI 1.15-15.31)		



GESTATION | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |

KG

GESTATION EST. BY	
Date	
Sonar	
Both	
SF - measurement	
NB: x = weight	
o = measurement	



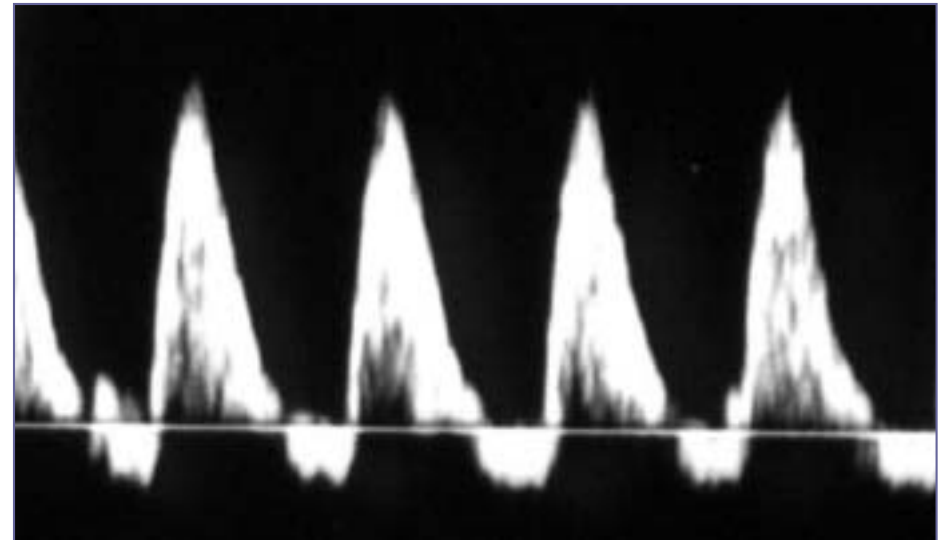
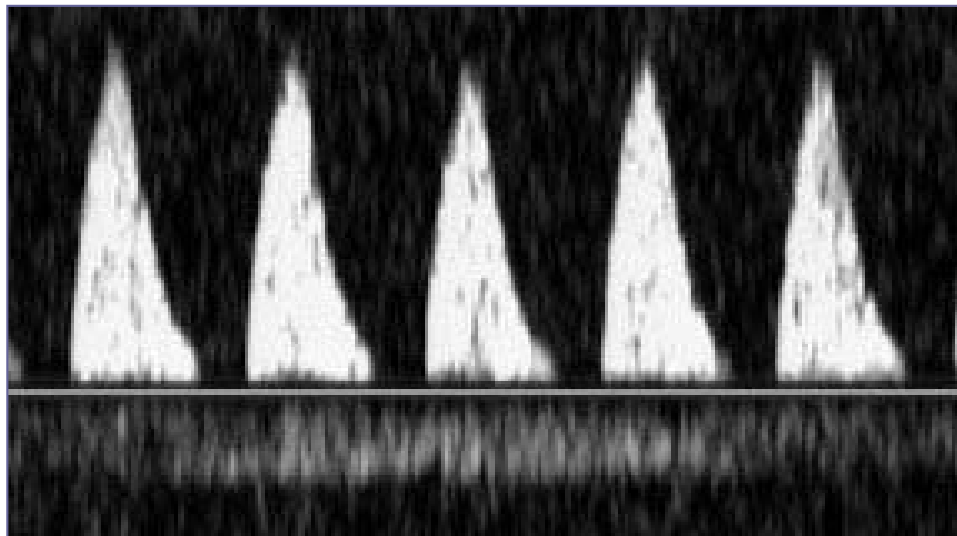
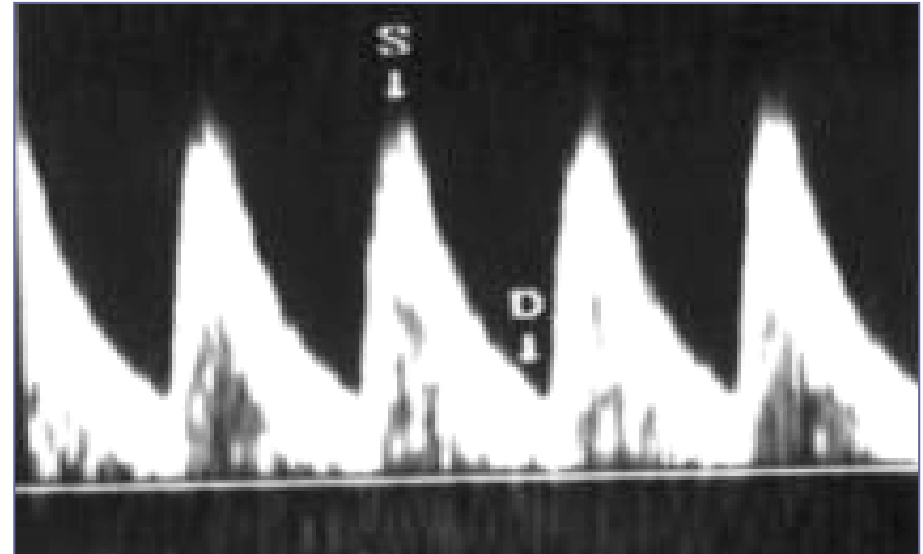
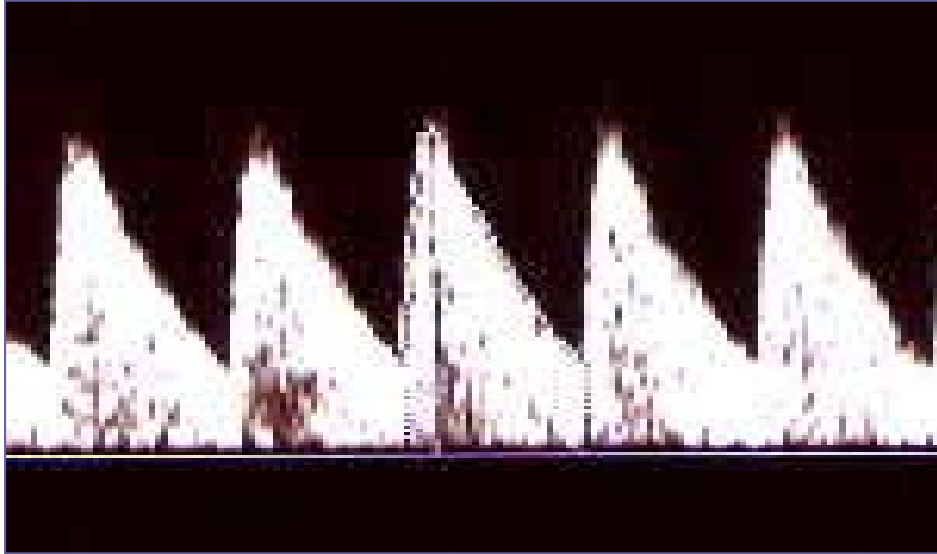
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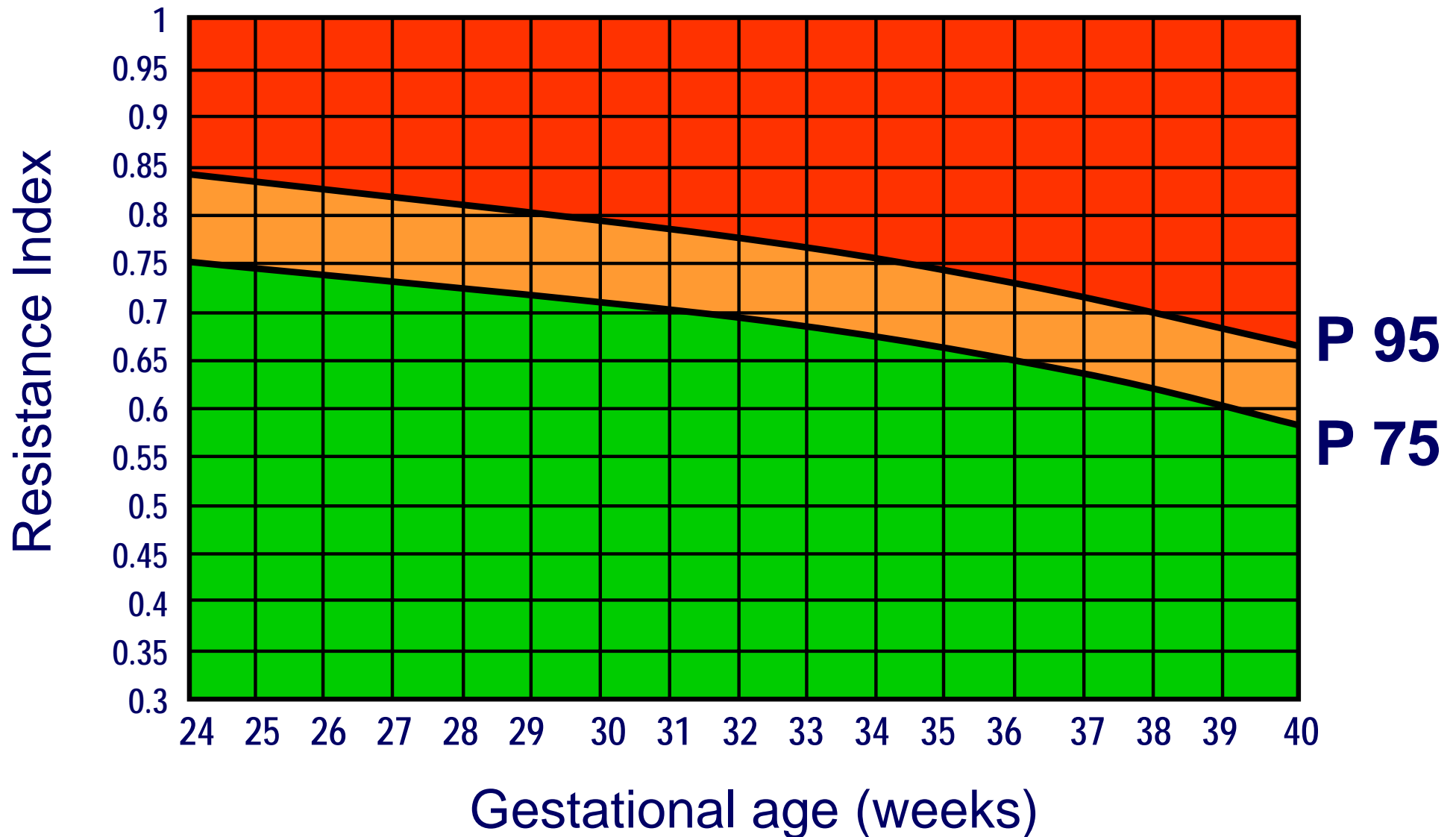


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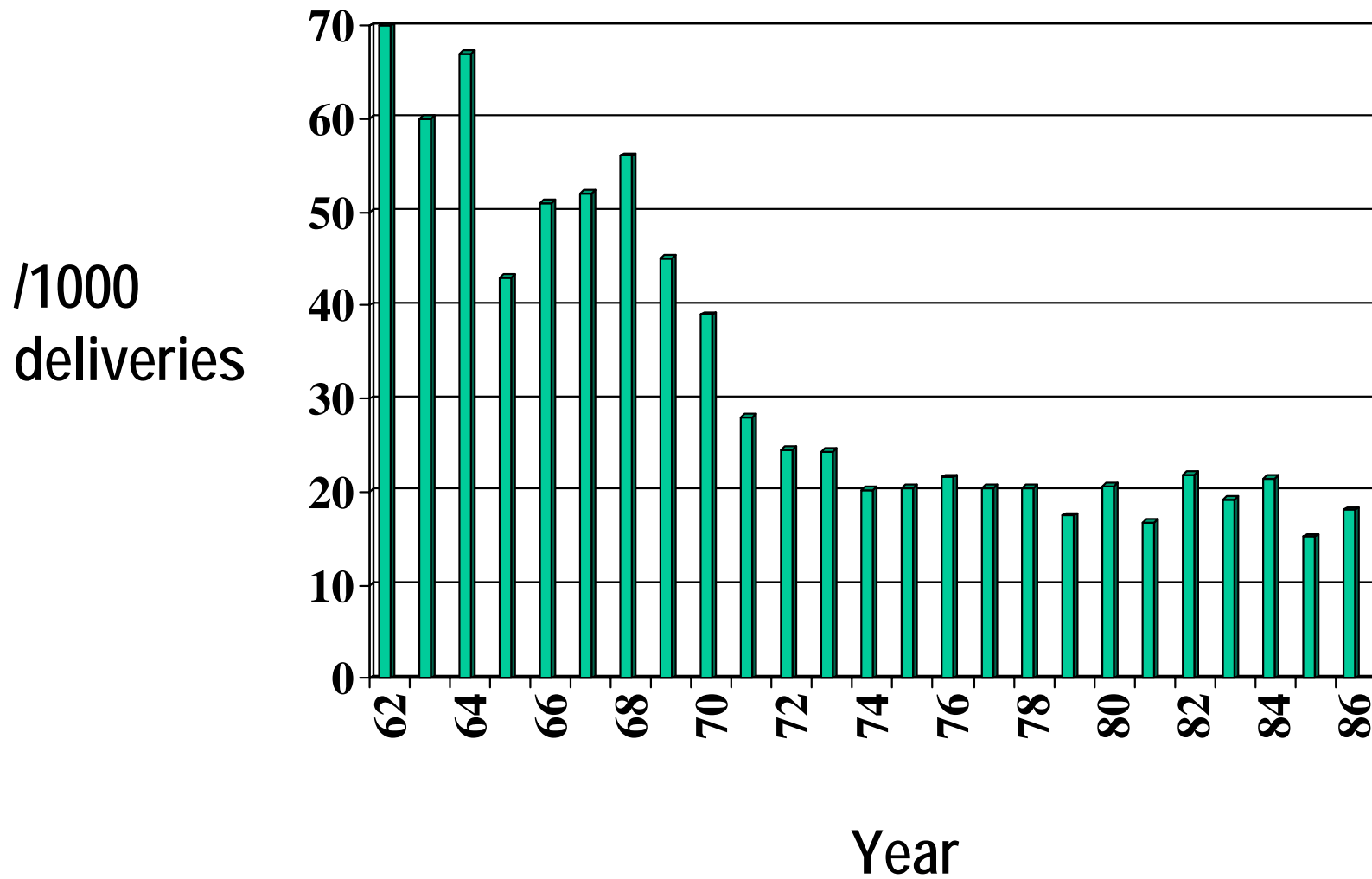
Umbilical artery Doppler flow velocity waveforms



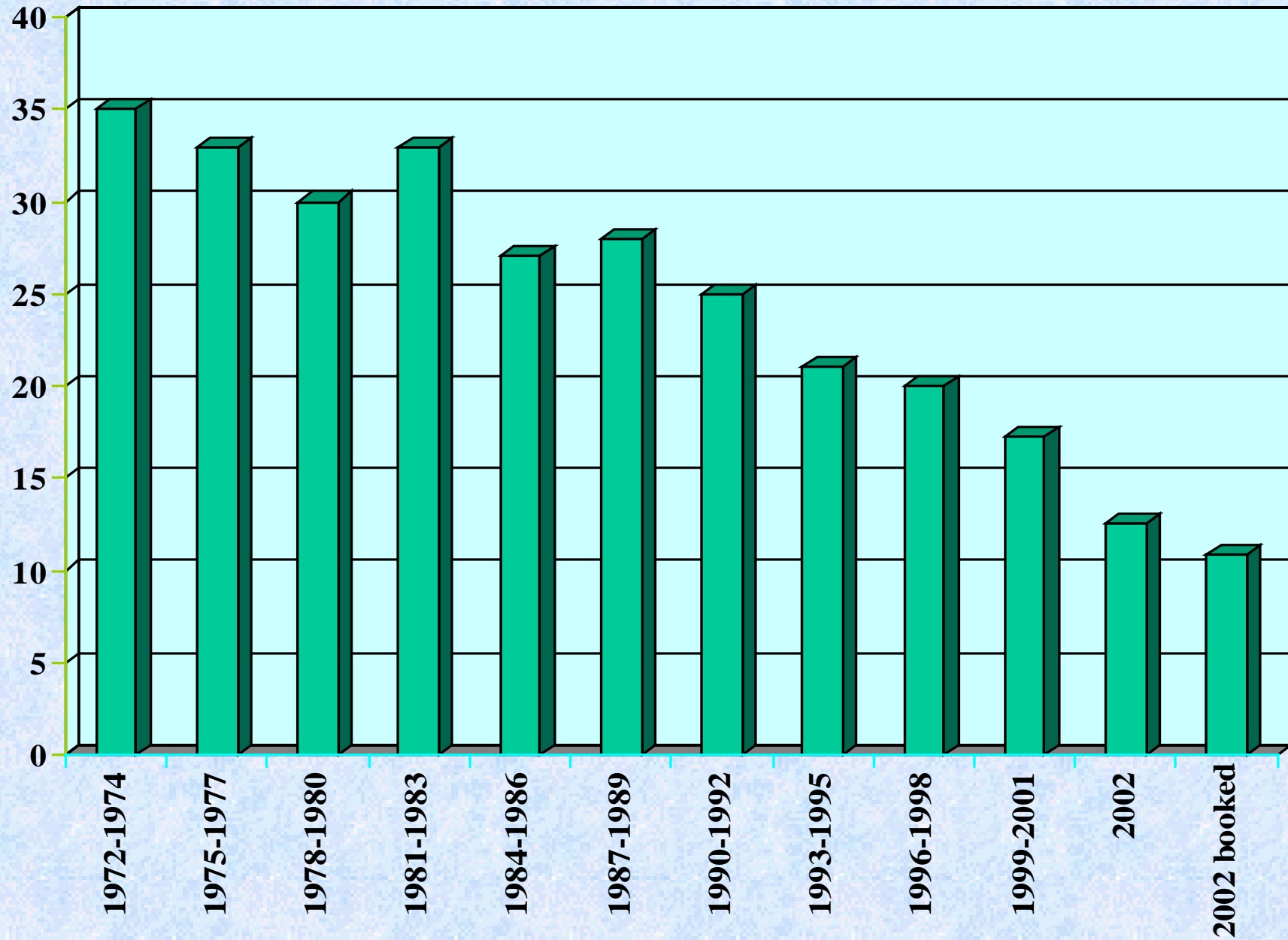
Normal resistance index centiles for umbilical artery Doppler



Intrauterine death rate for Coloured patients



Perinatal mortality rate Tygerberg Hospital area per 1000 deliveries birthweights $\geq 1000\text{g}$



Intrauterine/neonatal death ratio

