

Maternal Oral Health and Pregnancy Outcomes



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Prevalence of Oral Diseases

- Caries
 - Most common childhood infectious disease
 - 5x more common than asthma
- Gingivitis
 - Common in pregnancy
- Periodontal infection
 - Seen in up to 40% reproductive age women

Disparities in Oral Disease

- Racial
 - Black/Hispanics 2x periodontal infection, 3x untreated caries
- Income
 - Low income children 2-3x caries
 - Low income adults 3x caries

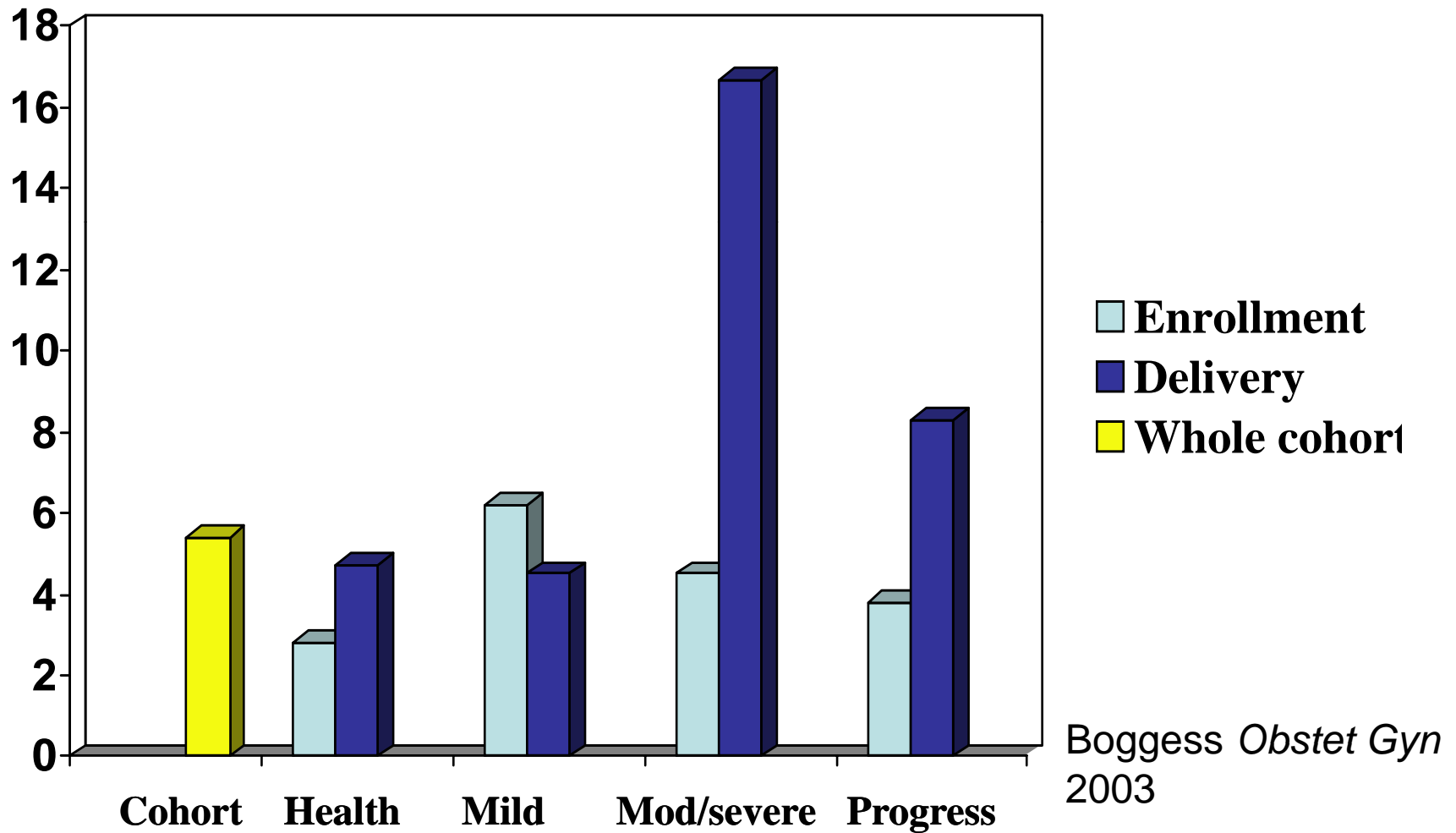
Biologic Effects of Oral Disease

- Inflammation
 - Local
 - Systemic
- Immune response
- Oxidative stress

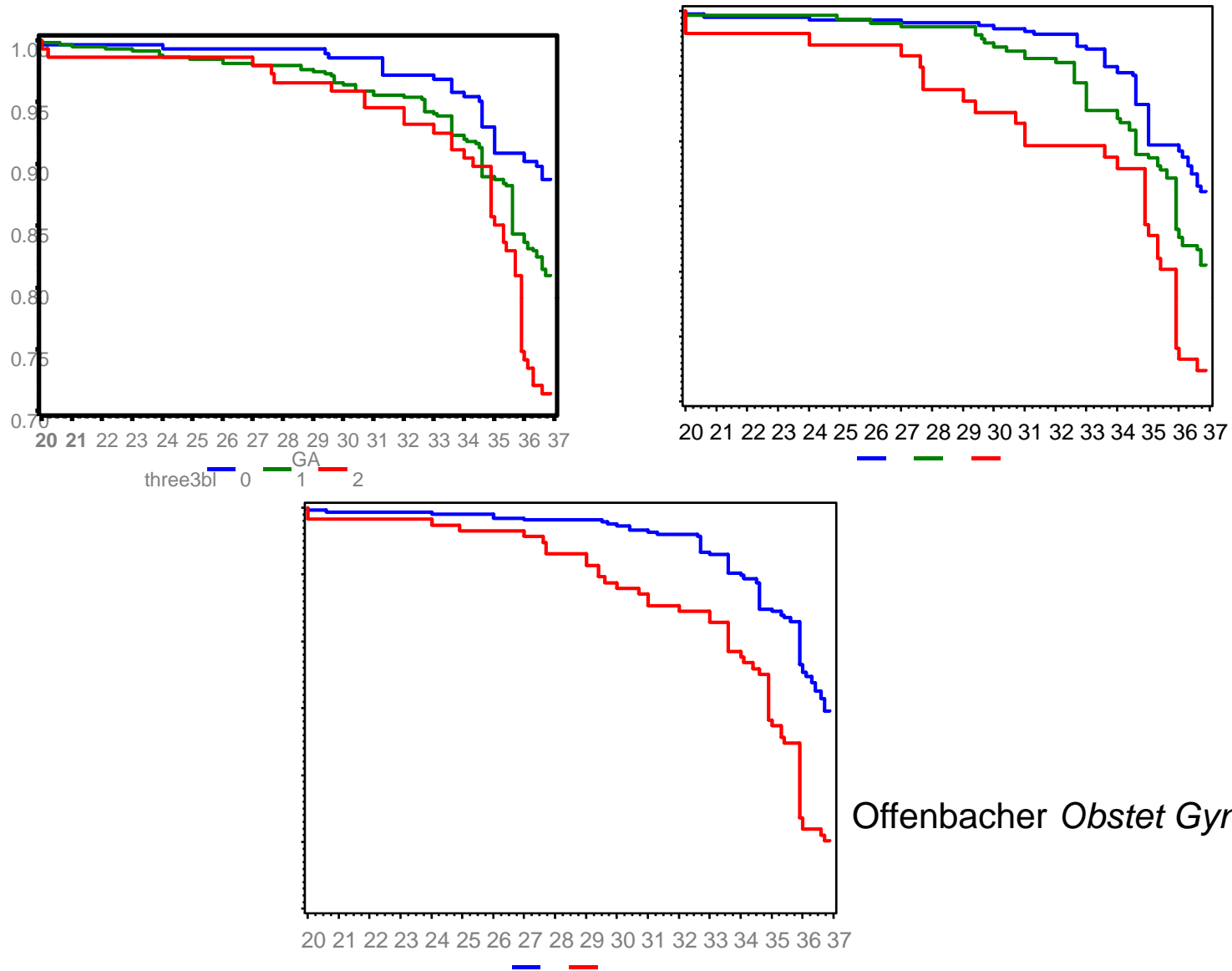
Oral-Medical Health Link

- Maternal oral disease and adverse pregnancy outcome
 - Increased risk for PTB, SGA, preeclampsia, fetal loss, GDM
 - Some studies show no relationship
 - Association vs. cause and effect

Periodontal Infection and Preeclampsia



Periodontal Infection and PTB



Offenbacher *Obstet Gynecol* 2005

Fetal Growth Restriction

- SGA rate 6.6%
- Moderate/severe periodontal infection associated with increased risk
 - Adj RR 2.3 (1.1 – 4.7)
- Risk associated with maternal inflammation
 - Adj RR 5.0 (1.5 – 16.3)

Studies With Positive Effect

Outcome	No.	Studies	Effect sizes
Preterm/Low Birth Weight	6	2 case-control; 1 cohort; 3 trials	CC: 4-7; C: 3.5; Trials:0.2-0.7
Preterm Birth	12	5 case-control; 5 cohort; 2 trials	CC: 4-5.5; C: 2-20; Trials 0.7-0.9
Low Birth Weight	10	6 case-control; 3 cohort; 1 trial	CC: 1-7; C: 3.6; Trials 0.2
Preeclampsia	4	3 case-control; 1 cohort	CC: 3-3.5; C: 2.4
Miscarriage /stillbirth	2	2 cohort	C: 2.5-3.8
Growth restriction	1	1 cohort	C: 2.3
Gestational diabetes	1	1 case-control	CC: 9.1

Studies With No Effect

Outcome	No.	Studies	Effect sizes
Preterm/Low Birth Weight	4	3 case-control; 1 cohort	CC: 0.8; C: 1.9
Preterm Birth	11	6 case-control; 4 cohort; 1 trials	CC: 1.1-2.5; C: trials 0.9
Low Birthweight	5	2 case-control; 2 cohort; 1 trial	CC: 1-7; C: trial 0.9
Preeclampsia	1	1 case-control	CC: 0.9
Growth restriction	1	1 trial	Trial 1.04

Maternal Oral Health

- Treatment
 - Improves maternal oral health
 - Reduces oral microbial burden
 - Reduces local inflammation
 - Has potential to reduce preterm birth



No. at Risk

Control group	410	410	409	408	403	398	395	393	393	389	387	385	372	353
Treatment group	413	413	413	410	406	404	401	401	400	399	397	390	378	358

Figure 2. Kaplan–Meier Curve for the Cumulative Incidence of Pregnancies Ending before 37 Weeks.

Cost of Maternal Oral Disease

- Unknown
- What proportion of adverse pregnancy outcome attributable to periodontal infection?
- Overall cost to health and well being
- Implications for infant oral health

Policy Implications

- Who gets dental care?
- Who provides dental care?
- How is dental care paid for?
- Role of oral health care in prenatal care?

References

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