

Why do we believe that the antibody responses after IPV were not due to “contamination” from OPV?

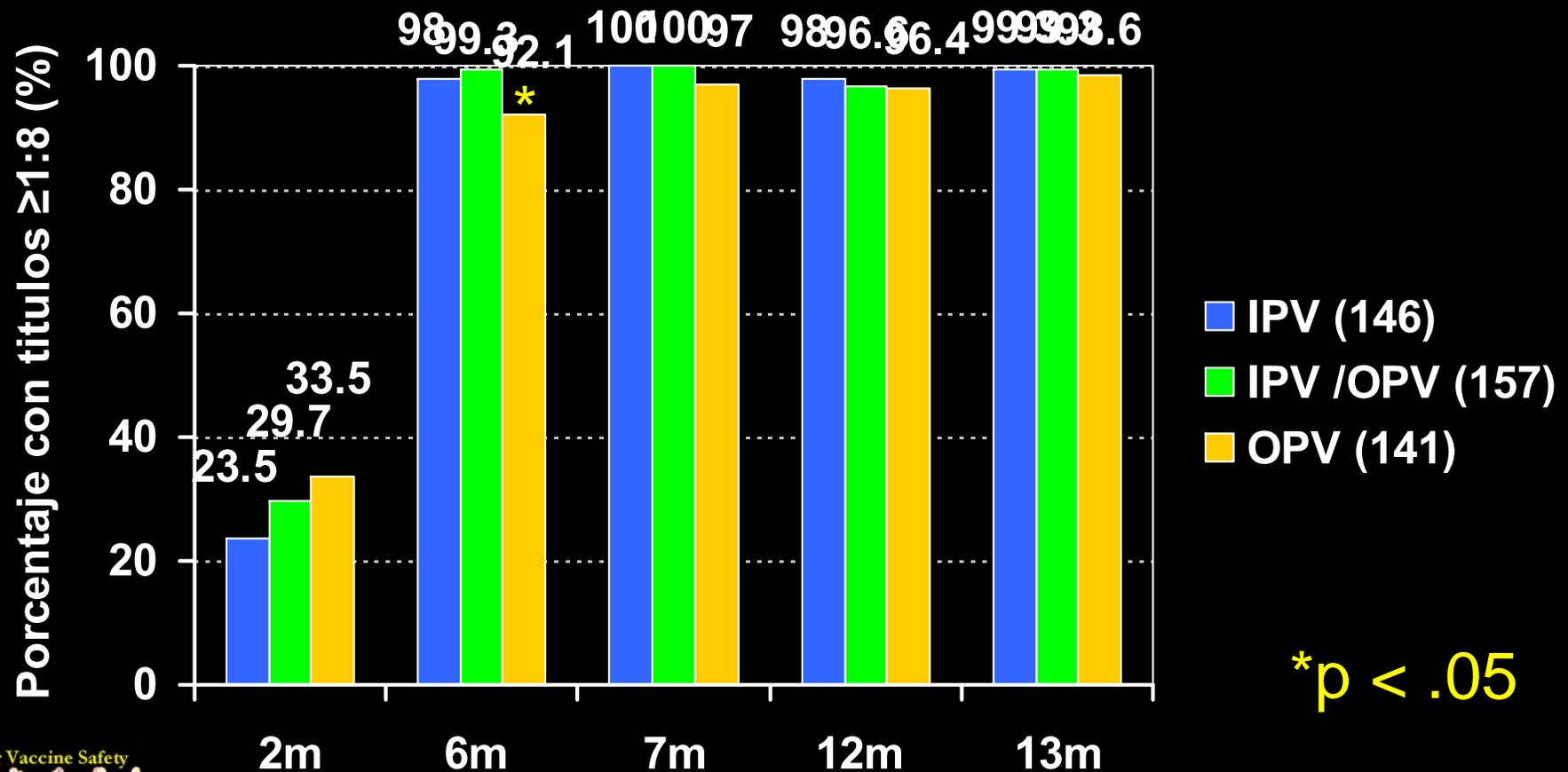
Randomized Trial of Inactivated and Live Polio Vaccine Schedules in Guatemalan Infants

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Percent With Antibody $\geq 1:8$ by Age Guatemala Type 3

2, 4, 6, 12 mo schedule



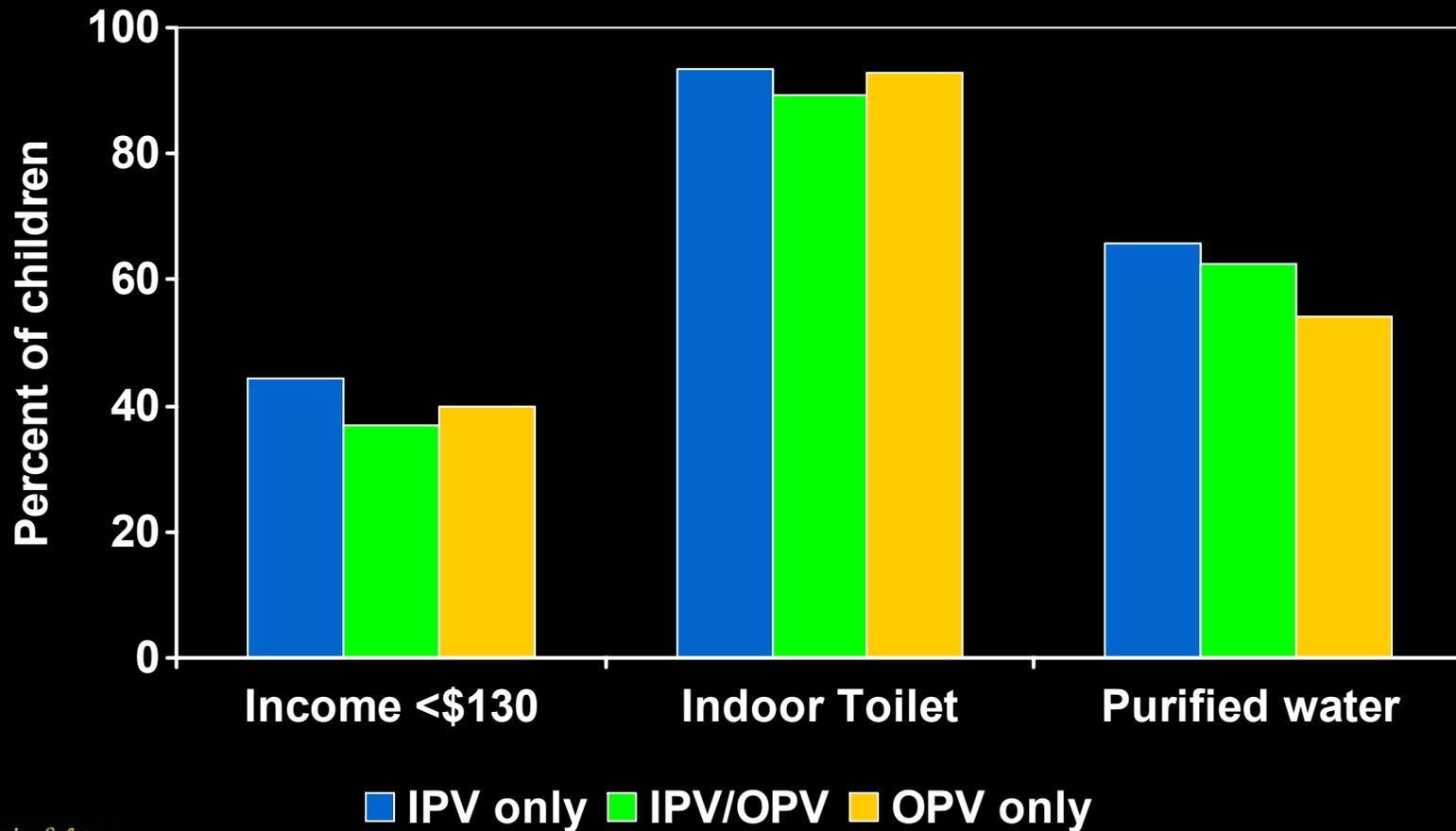
*p < .05

Population: Guatemala City

- 3 MOH clinics
- All eligible approached
- ~90% participated
- No NIDs



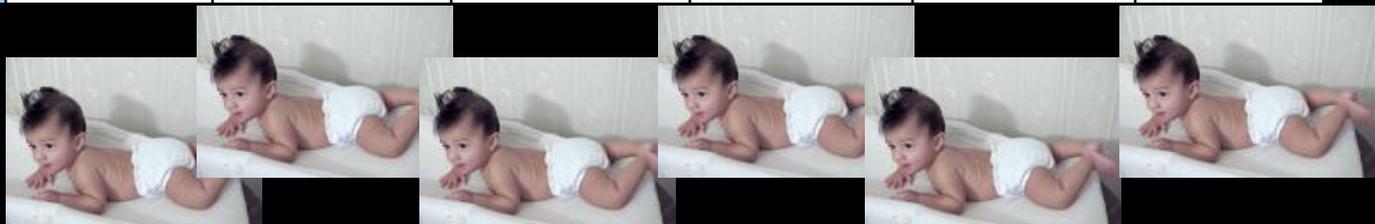
Parental Reporting of Socioeconomic Data by study group



Study Schedule

Stool Collection for Virus Shedding

| Study Group | Age in months | | | | | |
|--------------|---------------|-----|-----|----|-----|-----|
| | 2m | 4m | 6m | 7m | 12m | 13m |
| IPV only (A) | IPV | IPV | IPV | | IPV | |
| IPV/OPV (B) | IPV | IPV | OPV | | OPV | |
| OPV only (C) | OPV | OPV | OPV | | OPV | |



Stool PCR for Polioviruses

- Chumakov and Laassri (FDA)
- Multiplex reverse transcription PCR
- Stored at -70°

Stool PCR for Polioviruses

Table 4. Proportion of infants with positive stool polymerase chain reaction results, by study group, visit no., and vaccine type.

| Recommended age for visit, group | Samples, no. | Positive result | | | |
|----------------------------------|--------------|-----------------|----------|----------|-----------|
| | | Any | Sabin 1 | Sabin 2 | Sabin 3 |
| 2 months, IPV only | 57 | 1 (1.8) | 0 | 1 (1.8) | 0 |
| 4 months | | | | | |
| IPV only | 56 | 0 | 0 | 0 | 0 |
| OPV only | 51 | 19 (35.3) | 9 (17.6) | 8 (15.7) | 10 (19.6) |
| 6 months, IPV only | 47 | 4 (8.5) | 4 (8.5) | 1 (2.1) | 1 (2.1) |
| 7 months | | | | | |
| IPV only | 31 | 0 | 0 | 0 | 0 |
| IPV/OPV | 36 | 17 (47.2) | 3 (8.3) | 9 (25.0) | 12 (33.3) |

NOTE. Data are no. (%) of infants, unless otherwise indicated. IPV, inactivated poliovirus vaccine; OPV, oral polio vaccine.

Stool PCR for Polioviruses

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| | | Any | Sabin 1 | Sabin 2 | Sabin 3 |
| 2 months, IPV only | 57 | 1 (1.8) | 0 | 1 (1.8) | 0 |
| 4 months | | | | | |
| IPV only | 56 | 0 | 0 | 0 | 0 |
| OPV only | 51 | 18 (35.3) | 9 (17.6) | 8 (15.7) | 10 (19.6) |
| 6 months, IPV only | 47 | 4 (8.5) | 4 (8.5) | 1 (2.1) | 1 (2.1) |
| 7 months | | | | | |
| IPV only | 31 | 0 | 0 | 0 | 0 |
| IPV/OPV | 36 | 17 (47.2) | 3 (8.3) | 9 (25.0) | 12 (33.3) |

2 months after 1st OPV

1 month after 1st OPV

NOTE. Data are no. (%) of infants, unless otherwise indicated. IPV, inactivated polio-

PCR Quantitative Results

- **IPV only** at 6 mo.(4) $10^{1.9}$
- **IPV-OPV** 1 mo. after 1st OPV (17) $10^{5.9}$
- **OPV only** 2 mo. after 1st OPV (18) $10^{6.1}$

Peak shedding expected in first few weeks
Titers decrease with time.

Conclusions

- Low rate of acquisition of polioviruses in IPV recipients in Guatemala City
- Some evidence for decreased shedding in children who received 2 doses of IPV challenged with OPV
- New PCR methods might serve as substitute for culture

