

Cytomegalovirus (CMV) serological screening at the first antenatal visit: a tertiary centre audit of GP practices and maternal seroprevalence.

Ignatius Rudd¹, Melvin Barrientos Marzan^{1,2,3}, and Lisa Hui^{1,2,3}

[1] Department of Perinatal Medicine, Mercy Hospital for Women, Heidelberg, Victoria, Australia

[2] Department of Obstetrics and Gynaecology, University of Melbourne, Parkville, Victoria, Australia

[3] Reproductive Epidemiology Group, Murdoch Children's Research Institute, Parkville, Victoria, Australia



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Introduction

- CMV is the most common congenital infection and preventable cause of cerebral palsy and hearing loss¹ with a birth prevalence of 0.5% in high income countries²
- Universal serological screening for CMV IgG is not currently recommended. RANZCOG recommends that clinicians consider targeted screening at the first antenatal visit for women with increased risk of CMV infection.
- There is no recently published data on the seroprevalence in Australian pregnant women and how many women currently receive CMV screening at the first antenatal visit.

Objectives

- To determine the rate of routine antenatal CMV serological screening by general practitioners
- To measure CMV seroprevalence rates among those screened, and
- Analyse the relationship of known risk factors for CMV infection with seronegative status (parity, child ≤ 5, socioeconomic status, maternal age, and country of birth).

Methodology

- A retrospective hospital audit of antenatal screening blood tests from GP referrals for antenatal care at a major tertiary centre for all consecutive births over a 2-month period in 2021.
- Information on CMV serology testing (IgG, IgM, and IgG avidity testing), parity, child ≤ 5, socio-economic indexes for areas (SEIFA), maternal age and country of birth were collected. SEIFA score is a population-based indicator of socio-economic status by postcodes.
- We performed unadjusted and multivariable logistic regression to determine factors related to IgG negativity and present these as Adjusted/Unadjusted Odds Ratios with 95% confidence intervals.

Results

- 840 referrals met inclusion criteria
- 14% of women had CMV screening at the first antenatal visit, and of these, 43% were CMV IgG negative and therefore susceptible to primary illness
- Seronegative women were more likely;
 - To have been born in an economically developed country
 - To live in a socioeconomically advantaged postcode, and
 - To be pregnant with their first child

Discussion & Conclusion

- We determined that 1 in 7 women currently receive CMV serological screening by their GPs at the initial pregnancy visit. Of these, 43% were CMV IgG negative
- Our audit demonstrated higher rates of CMV seronegativity among those born in economically developed countries (OECD), those living in a higher socio-economic area and those who were nulliparous.
- Further health professional education about screening of appropriate risk groups, and primary prevention with maternal education on hygiene precautions to avoid infection are currently underway at our institution. The information from this study will help to guide future pilot studies of congenital CMV prevention strategies.

Table 1. Serostatus by socioeconomic status, parity, child ≤ 5, maternal age and country of birth

	IgG (+)		IgG (-)		P	Unadjusted			Adjusted*		
	total	(%)	total	(%)		OR	95% CI	P	OR	95% CI	P
Seronegativity rate	65	57.2%	49	43.0%							
SEIFA											
1 - Most disadvantaged	31	29.6%	13	29.6%		Ref					
2	20	55.6%	16	44.4%		1.9	0.9 - 4.8	0.17	1.3	0.8 - 4.4	0.60
3 - Most advantaged	14	14.2%	20	58.8%	0.03	3.4	1.3 - 8.7	0.01	2.7	0.9 - 7.8	0.07
Parity, n (%)											
0	23	44.2%	29	55.8%		2.6	1.2 - 5.7	0.01	2.4	1.0 - 5.8	0.06
≥1	42	67.7%	20	32.3%	0.01	Ref					
Child ≤ 5yrs**											
No	31	50.8%	30	49.2%		1.7	0.8 - 3.7	0.15	1.3	0.5 - 3.6	0.60
Yes	34	64.2%	19	35.9%	0.15	Ref					
Maternal age											
<29	16	61.5%	10	38.5%		Ref					
30-34	23	50.0%	23	50.0%		1.6	0.6 - 4.3	0.35	1.5	0.5 - 4.5	0.49
35 above	26	61.9%	16	38.1%	0.46	1.0	0.4 - 2.7	0.98	1.4	0.4 - 4.8	0.55
Country of Birth											
non-OECD Countries	24	96.0%	1	4.0%		Ref					
OECD	41	46.1%	48	53.9%	0.00	28.1	3.6 - 216.8	0.00	23.4	2.9 - 186.2	0.00

*Adjusted for SEIFA, parity, maternal age, OECD region of birth

**Adjusted SEIFA, maternal age, OECD region of birth

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