

ONLINE EXCLUSIVE

Does group prenatal care improve pregnancy outcomes?

Evidence-based answer

Yes, it may decrease preterm births, especially among higher-risk women—minority women, women of low socioeconomic status, and adolescents

(strength of recommendation [SOR]: **B**, 1 randomized, controlled trial [RCT] and 1 matched cohort study).

Evidence summary

The evidence supporting improved health outcomes resulting from group prenatal care is limited. We found 1 RCT,¹ 1 matched-cohort study,² and several pilot studies with descriptive analysis.³⁻⁵ All data sets used a trademarked group prenatal care model, CenteringPregnancy. The **TABLE** summarizes the outcomes of group and individual prenatal care reported in the studies.

Fewer preterm births

One large, unblinded RCT investigated the effect of group prenatal care on a cohort of young, mostly minority women of low economic status. Women who received group prenatal care had fewer preterm births than those who received traditional care (number needed to treat [NNT]=25; $P=.045$).¹

A single cohort study compared pregnant teenagers enrolled in the CenteringPregnancy program with 2 clinic convenience samples. The group care recipients had significantly lower preterm delivery rates (NNT=7; $P<.02$).³ The study design, and therefore the detected relationship of group care to pregnancy-associated outcomes, may be particularly subject to selection bias.

Birth weight data are inconsistent

The matched cohort study recorded higher birth weights among infants born to mothers in group prenatal care.² Subset analysis of preterm infants born to mothers in group care showed average birth weights approximately 400 g higher than those in individual care ($P<.05$).² The RCT, however, found no clinically or statistically significant differences in birth weights between intervention and control groups.¹

Group care boosts breastfeeding, knowledge, and satisfaction

The RCT and the cohort study showed increased rates of breastfeeding initiation (NNT=8 and 6, respectively).^{1,3} The RCT demonstrated that patients in group care more often had adequate prenatal care (NNT=16).¹ One cohort trial found that women enrolled in group prenatal care used the emergency department less during the third trimester (NNT=2, $P=.001$).⁴

Several studies have reported improved pregnancy knowledge and high levels of satisfaction with group prenatal care. The RCT showed increased knowledge and readiness for labor, and higher satisfaction compared with individual

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Group prenatal care may decrease preterm births, especially among minority women, women of low socioeconomic status, and adolescents.

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Several studies reported improved pregnancy knowledge and high levels of satisfaction with group prenatal care.

TABLE

Pregnancy outcomes: Group vs individual prenatal care

STUDY	STUDY DESIGN	OUTCOMES: GROUP VS INDIVIDUAL PRENATAL CARE	OR (95% CI)	NNT
Ickovics JR et al. ¹	RCT N=1047	Preterm births	0.67 (0.44-0.98)	25
		Preterm births in African American women	0.59 (0.38-0.92)	17
		Breastfeeding initiation	1.73 (1.28-2.35)	8
		Less-than-adequate prenatal care*	0.68 (0.50-0.91)	16
			RESULTS (P VALUE)	
Ickovics JR et al. ²	Matched cohort N=458	Birth weight (g)	3228 vs 3159 (P<.01)	—
		Preterm birth weight (g)	2398 vs 1990 (P<.05)	—
Grady MA et al. ³	Cohort study with clinic comparison N=124 (intervention)	Preterm births <37 wk (%)	10.5 vs 25.7 (P<.02)	7
		Low birth weight <2500 g (%)	8.8 vs 22.9 (P<.02)	7
		Breastfeeding at hospital discharge (%)	46 vs 28 (P<.02)	6
Rising SS ⁴	Descriptive analysis N=111	3rd trimester emergency room visits (%)	26 vs 74 (P=.001)	2
Baldwin KA ⁵	2-group pre-/post-test design N=98	Change in prenatal knowledge scores†	0.98 vs 0.4 (P=.03)	—

CI, confidence interval; NNT, number needed to treat; OR, odds ratio.

*Kotelchuck Adequacy of Prenatal Care Utilization Index, a validated scoring scale encompassing timing of initiation of care, number of visits, and quality and content of prenatal care. Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and the proposed Adequacy of Prenatal Care Utilization Index. *Am J Public Health*. 1994;84:1414-1420.

†Patient Participation and Satisfaction questionnaire. Littlefield V, Adams B. Patient participation in alternative perinatal care: impact on satisfaction and health locus of control. *Res Nurs Health*. 1987;10:139-148.

care (P<.001 for all outcomes).¹ Lower-quality studies of group care support these findings.³⁻⁵

An innovative model that requires further study

Group prenatal care is a relatively new, innovative model of care, and limited data are available for review. The evidence from 1 RCT and 1 cohort study supports the protective effect of group prenatal care against preterm delivery for women at higher risk of adverse

pregnancy outcomes.^{1,2} Trends toward improved health outcomes were found in lower-quality studies; the trends were large enough to have potential clinical significance. These preliminary findings should be evaluated as primary health outcomes in future research to define the optimal population for group care.

Recommendations

No published guidelines or textbook recommendations exist for group-based pre-

natal care. In other areas of medical care, including diabetes and low back pain, specialty societies such as the American Diabetes Association and systematic reviews have supported practice changes, including group visits, to improve care.^{6,7} ■

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One study found that women enrolled in group prenatal care used the emergency department less during the third trimester.

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What measures relieve postherpetic neuralgia?

Evidence-based answer

Tricyclic antidepressants, gabapentin, and pregabalin effectively reduce pain (strength of recommendation [SOR]: **A**, at least 2 good-quality randomized controlled trials [RCTs] and/or meta-analyses). Opioids have

demonstrated pain relief in 3 RCTs (SOR: **A**, consistent RCTs). Capsaicin and the lidocaine 5% patch relieve pain and decrease allodynia (SOR: **B**, recommendations from meta-analyses and lower-quality RCTs).

Evidence summary

Postherpetic neuralgia (PHN) is defined as pain lasting 1 to 3 months after resolution of acute herpes zoster (shingles) rash. It occurs in approximately 10% to 15% of patients and can cause significant morbidity.

Tricyclic antidepressants provide effective pain relief

Five systematic reviews have concluded that tricyclic antidepressants (TCAs) are effective treatments for PHN.¹⁻⁵ Amitriptyline, the best studied TCA, provides at least moderate pain relief in two-thirds of patients with a pooled number needed to treat (NNT) for TCAs of 2.64 (95% confidence interval [CI], 2.1-3.54)⁵ (**TABLE**).

Selective serotonin reuptake inhibitors—including fluoxetine, paroxetine, citalopram, and sertraline—have been studied in a variety of neuropathic pain syndromes, but not for treating PHN.¹

Anticonvulsants help, too

Five systematic reviews found gabapentin to be effective, with a range of NNT from

2.8 to 5.3 for as much as 50% pain reduction based on the visual analog score (VAS).²⁻⁶ Pregabalin is also effective, with an NNT of 4.93 (95% CI, 3.34-6.07) for up to 50% pain reduction.^{7,8} Limited data are available concerning the effectiveness of valproate.⁵

A look at the role of narcotics

Four systematic reviews found that controlled-release oxycodone reduced pain by 50%, based on the VAS.²⁻⁵ Another systematic review reported only limited evidence of effectiveness.⁶ In pooled results from systematic reviews, opioids decreased pain by 50% on the VAS (NNT=2.67; 95% CI, 2.10-3.77).⁶

An RCT of 76 patients demonstrated that morphine, with methadone as backup, both reduced the intensity of pain and relieved pain more than placebo.⁹

Tramadol, a selective opioid agonist, showed moderate effectiveness in a small RCT (N=125), with an NNT of 4.76 (95% CI, 2.61-26.97).^{3,5,6} The mean pain intensity, degree of pain relief, and amount of rescue medication required

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Tricyclic antidepressants, anticonvulsants, and narcotics all reduce postherpetic pain.

TABLE

What's the NNT for drugs used to treat postherpetic neuralgia?

CLASS	DRUG	DOSE	NNT	SIDE EFFECTS
Tricyclic antidepressants ⁵	Amitriptyline	Up to 150 mg/d (mean 120 mg/d)	2.64	Sedation, dry mouth, blurred vision, constipation, urinary retention
	Nortriptyline	Up to 150 mg/d (mean 89 mg/d)		
	Desipramine	Up to 150 mg/d (mean 65-73 mg/d)		
Anticonvulsants ^{3,5}	Gabapentin	1800-3600 mg/d	2.8-5.3	Somnolence, dizziness, edema, dry mouth
	Pregabalin	150-600 mg/d	4.93	
Opioids ⁵	Oxycodone	Variable	2.67	Constipation, nausea, vomiting, sedation, dizziness, dependence
	Long-acting morphine/methadone	15-225 mg/d (morphine) (mean 91 mg/d for morphine, 15 mg/d for methadone)	2.67	
	Tramadol	100-400 mg/d (mean 275 mg/d)	4.76	Dependence
Topicals ⁵	Capsaicin 0.075% cream	Applied 3-4 times per day	3.26	Burning skin
	Lidocaine 5% extended release patch	Max 3 patches per day	2.0	Mild skin reaction

NNT, number needed to treat.

were all better in the tramadol group than the placebo group.

Evidence for topical therapy is limited

The anesthetic lidocaine patch 5% has shown efficacy in PHN with allodynia based on 3 RCTs of lower quality (short duration, recruitment of patients who had improved on lidocaine previously, no report of baseline levels of pain); the NNT was 2 (95% CI, 1.4-3.3).¹⁰ A systematic review of these 3 RCTs concluded that evidence is insufficient to recommend the lidocaine patch as treatment for PHN.¹⁰

Capsaicin, a topical counterirritant, reduced pain in fewer than 20% of patients in 2 RCTs reported in systematic reviews, with an NNT of 3.26 (95% CI, 2.26-5.85).²⁻⁶ Blinding was limited in these studies because of the stinging associated with treatment.

Recommendations

A 2004 practice parameter of the American Academy of Neurology recommends TCAs (amitriptyline, nortriptyline, desipramine, and maprotiline), gabapentin, pregabalin, opioids, topical lidocaine, and capsaicin to treat PHN (level of evidence: A), but notes that amitriptyline has significant cardiac effects in the elderly compared with nortriptyline and desipramine.³

In 2006, the European Federation of Neurological Societies determined that TCAs, gabapentin, pregabalin, and opioids had established efficacy (level of evidence: A), but recommended opioids as second-line therapy because of potential adverse events with long-term use.⁴ The federation's guidelines designate capsaicin, tramadol, topical lidocaine, and valproate as drugs with lower efficacy or limited strength of evidence (level of evi-

dence: **B**). Nevertheless, they recommend considering topical lidocaine for elderly patients with allodynia and small areas of pain.⁴ ■

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Both topical lidocaine and capsaicin have less evidence of efficacy as treatment for PHN.