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Dilapan-S vs standard methods for cervical ripening in term pregnancies: an individual patient data meta-analysis

Study design

The meta-analysis used individual patient data (IPD) from four randomized controlled trials. 1,731 women involved (1,036 with DILAPAN-S, 695 with alternative cervical ripening methods).

Bayesian statistics was used to calculate probabilities of noninferiority and superiority of the effectiveness of DILAPAN-S compared to other methods.

Principal investigator

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Objective

To compare the cesarean delivery rate of DILAPAN-S to alternatives, evaluating its effectiveness, safety, and patient satisfaction against traditional cervical ripening methods, with subgroup analyses based on patient characteristics such as parity and body mass index.

The first comprehensive meta-analysis comparing DILAPAN-S with other methods.

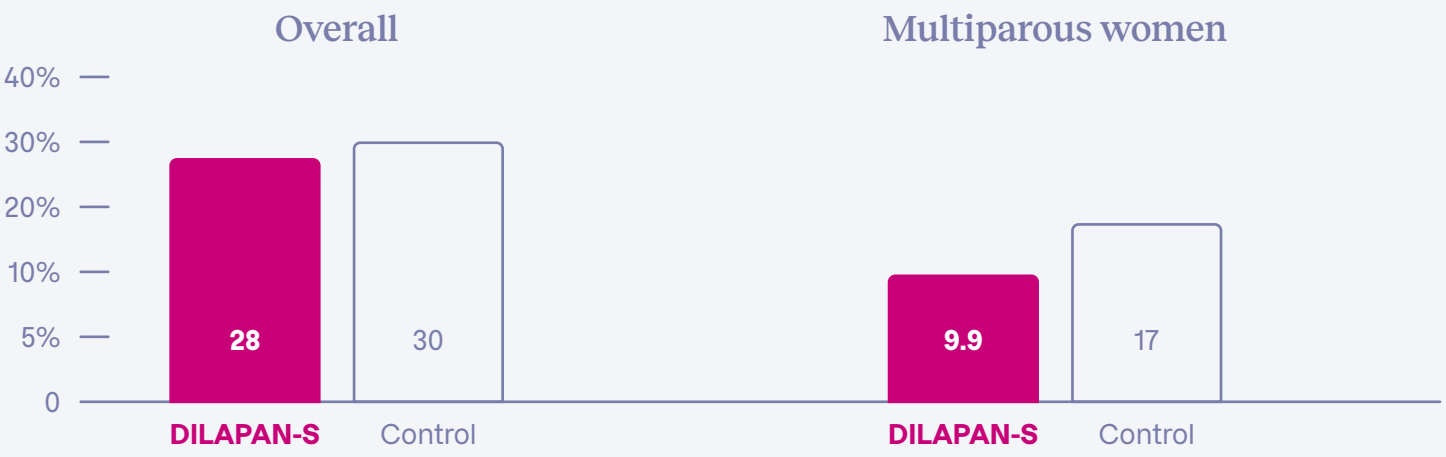
- 99% probability of lower cesarean delivery rate among multiparous women
- Significantly fewer complications during cervical ripening
- Significantly reduced pain levels and improved patient satisfaction
- As safe and effective as other methods

Clinical trials included

Four randomised trials comparing DILAPAN-S with other methods were involved, including the Foley balloon, low-dose oral misoprostol and dinoprostone vaginal insert.

Study	Trial name	No. of participants	Intervention	Control	Primary outcome
Saad et al	DILAFOL	417	DILAPAN-S	Foley balloon	Vaginal delivery
Gupta et al	SOLVE	672	DILAPAN-S	Dinoprostone vaginal insert	Cesarean delivery
Gavara et al	COMRED	303	DILAPAN-S	Oral misoprostol	Vaginal delivery within 36 h
Saad et al	HOMECARE	339	DILAPAN-S outpatient	DILAPAN-S inpatient	Hospital stay longer than 48 h

Cesarean delivery rate



% of women

Subgroup analysis demonstrated significant 99% probability of lower cesarean delivery rate among multiparous women induced with DILAPAN-S.

Maternal and neonatal outcomes

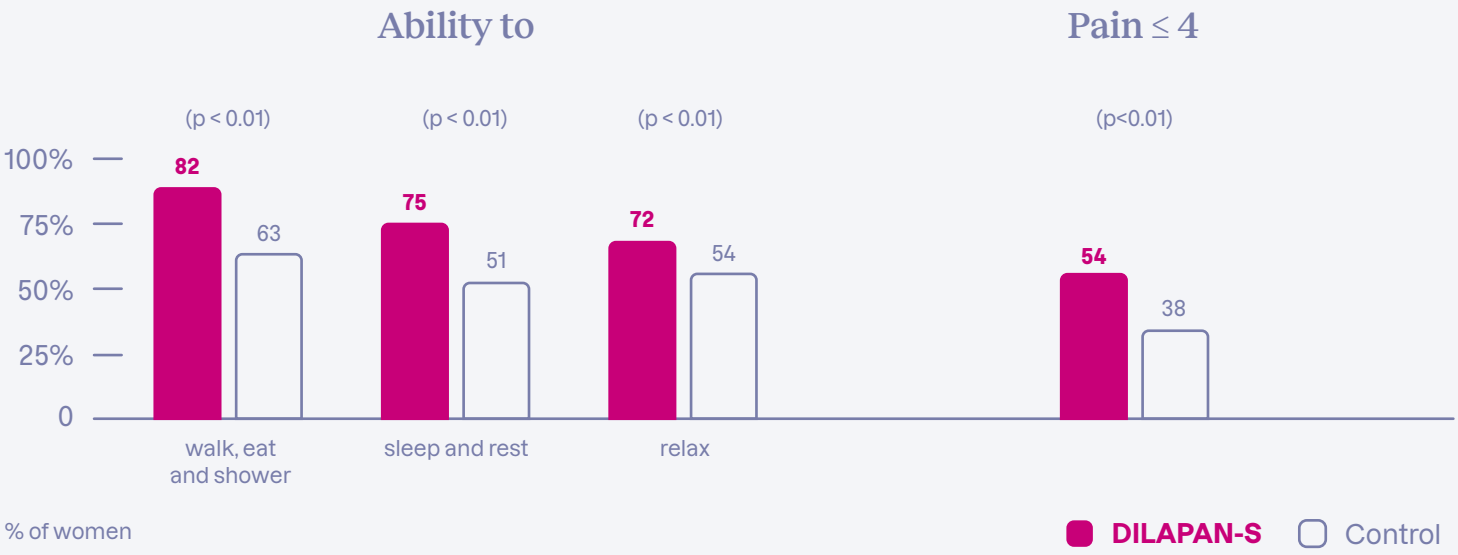
Selected secondary maternal outcomes

Outcome	DILAPAN-S	Control	P value
Time from admission to delivery (hours)	24.4	28.0	.15
Time from admission to discharge (days)	2.3	2.5	.58
Change in Bishop score	2.7	3.1	.13
Vaginal delivery without maternal or neonatal complication	65%	63%	.80
Complications during ripening *	**19%**	**47%**	**<0.01**
Uterine infection	8.3%	6.2%	.21

*Include: uterine hypertonus, uterine tachysystole, nonreassuring fetal heart tracing, gastrointestinal symptoms (diarrhea, nausea, vomiting), fever, spontaneous device expulsion, device entrapment or fragmentation, retraction into the uterine cavity, vaginal bleeding, cervical lacerations/injury, rupture of membranes, patient pain, allergic reactions, vasovagal reactions, hypotension, maternal tachycardia, and suspected chorioamnionitis.

The outcomes were similar between groups, except a significantly lower rate of complications during ripening (19% vs 47%) in DILAPAN-S group.

Maternal satisfaction during cervical ripening



DILAPAN-S provides a more comfortable cervical ripening process with significantly reduced pain levels and improved patient satisfaction.

Meta-analysis – DILAPAN-S key facts

99 %
probability of lowering cesarean delivery rates among multiparous

p < 0.01
consistently superior maternal satisfaction

19 %
low rate of complications during ripening; vs 47% in control group

REFERENCE:
Saad AF,et al. Dilapan-S vs standard methods for cervical ripening in term pregnancies: an individual patient data meta-analysis. Am J Obstet Gynecol MFM 2025;7:101583.
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