

Outcomes and factors affecting choices of primary interventions for Caesarean scar pregnancy

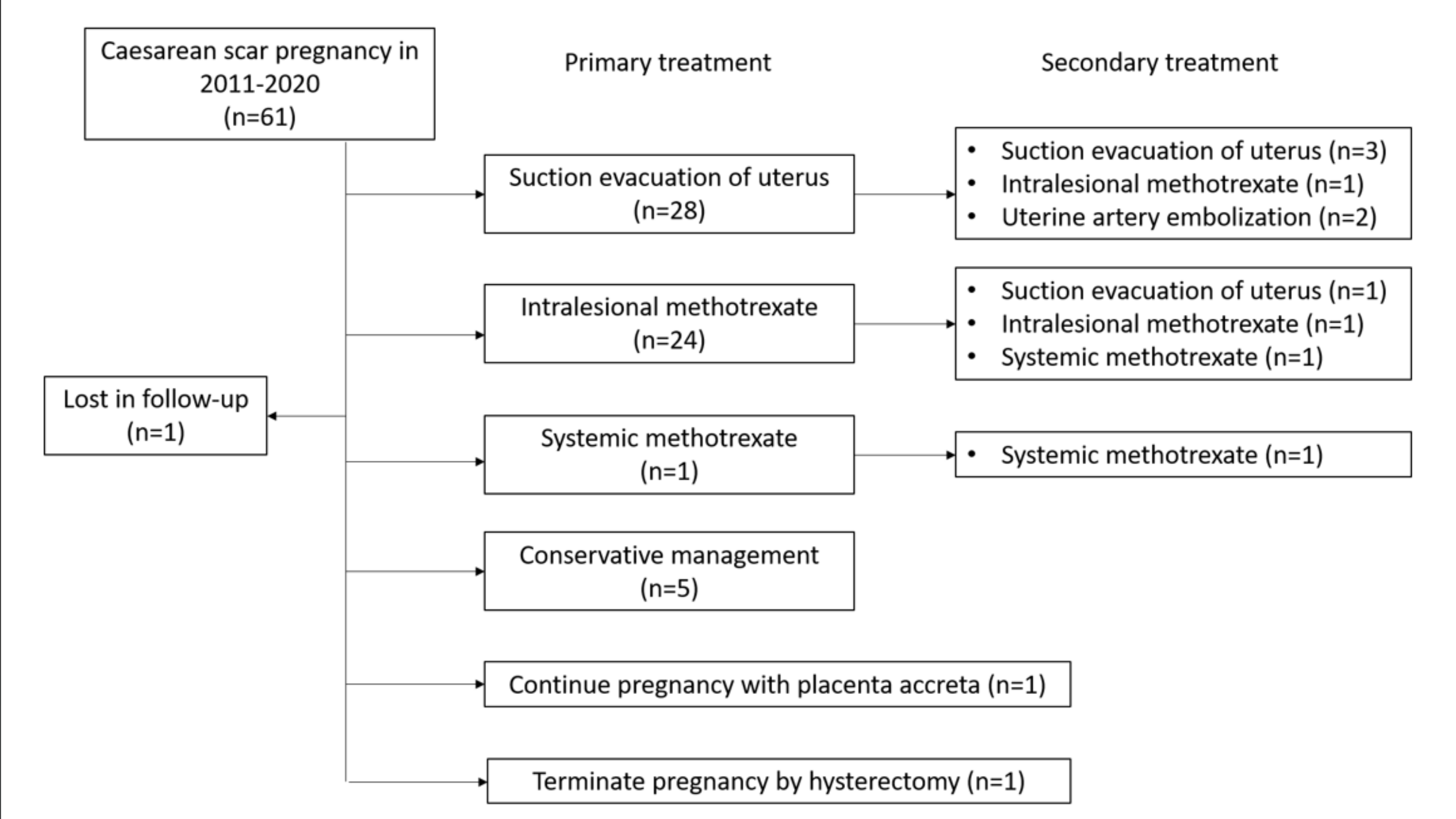
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OBJECTIVE:
To date, there is no consensus about the optimal management of Caesarean scar pregnancy (CSP) worldwide. We reviewed the outcomes of treatments for CSP and determined the factors affecting gynaecologists’ choice of primary interventions for CSP.

DESIGN: Retrospective cohort

METHOD:

- The present study included women with CSP over a 10-year period (2011-2020) at a public hospital in Hong Kong.
- The management for each CSP was led by experienced consultant gynaecologists.
- Clinical and ultrasound records of each CSP were reviewed.
- Demographic and pregnancy data of women, characteristics of CSP including type, size, viability, and serum beta human chorionic gonadotropin (bHCG) levels were compared between women managed by our two commonest primary interventions, suction evacuation of uterus (SE) and intralesional methotrexate administration (IM).
- The primary outcomes were the clinical factors influencing our choice of primary interventions for CSP.
- The secondary outcome was the value of post-treatment HCG changes in predicting secondary interventions, as determined by areas under the curves (AUCs) in receiver operating characteristic (ROC) curve analysis.



(Left) Flowchart summarizing the outcomes of primary treatments of 61 women with CSP

(Right) Different HCG changes in post-treatment days predicting failure of the two most commonly used primary treatments

(Below) Clinical characteristics in 52 women with CSP managed by the two most commonly used primary treatments

Characteristic	Primary treatment		
	Suction evacuation of uterus (n=28)	Intralesional methotrexate (n=24)	P value*
	mean ± SD, median (IQR) or number (%)		
Age (year)	36.0 ± 4.51	35.8 ± 4.21	0.869
Number of CS			
• 1	18 (64.3)	14 (58.3)	0.660
• >1	10 (35.7)	10 (41.7)	
Gestational age (week)	9.29 ± 2.77	7.88 ± 2.21	0.051
Type			
• Endogenous	27 (96.4)	13 (54.2)	<0.001
• Exogenous	1 (3.6)	11 (45.8)	
Mean adnexal mass diameter (mm)	25.9 ± 11.5	25.6 ± 10.7	0.903
Viable fetus / fetal pole present	5 /17 (29.4)	12 /16 (75.0)	0.015
Requiring secondary treatment	6 (21.4)	3 (12.5)	0.480
bHCG level (IU/L)			
• Day 0	5208 (783-43201)	49997 (19737-102551)	<0.001
• Day 4	1177 (251-10554)	53519 (27856-100117)	<0.001
• Day 7	452 (121-866)	39943 (6144-68789)	<0.001
bHCG change after treatment (%)			
• Day 0-4	-74.8 (-85.0 - -60.1)	+1.98 (-24.5 - +40.8)	<0.001
• Day 4-7	-62.5 (-82.0 - -35.2)	-28.7 (-42.7 - -13.4)	<0.001
• Day 0-7	-93.7 (-96.9 - -84.5)	-25.5 (-67.3 - +2.36)	<0.001
Time for bHCG to normalise (day)	35 (27-52)	67 (48-102)	<0.001

*: Independent t-test, chi-square test, Fisher’s exact test, Mann-Whitney U test were used where appropriate

Primary treatment	bHCG %change	AUC in ROC curve (95% CI)	P value
Suction evacuation of uterus	Day 0-4	0.854 (0.598-1.000)	0.057
	Day 4-7	0.771 (0.391-1.000)	0.146
	Day 0-7	0.812 (0.495-1.000)	0.094
Intralesional methotrexate	Day 0-4	0.737 (0.379-1.000)	0.182
	Day 4-7	0.649 (0.164-1.000)	0.247
	Day 0-7	0.719 (0.301-1.000)	0.213

RESULTS:

- Of all 61 women with CSP, 28 pregnancies were terminated by SE, and 24 by IM as the primary management.
- There was no significant difference between two groups in age, number of previous Caesarean sections, gestational age, and CSP size on ultrasound examination at diagnosis.
- Women first treated by IM were more likely to have exogenous CSP (‘into the niche’) (45.8% vs 3.6%, P<0.001), viable fetus (75.0% vs 29.4%, P<0.001), and higher pre-treatment bHCG levels (49997 IU/L vs 5208 IU/L, P<0.001) than women first treated by SE.
- Women with SE had quicker drops in day 0-4, day 4-7, and day 0-7 bHCG than women with IM, and time for bHCG to normalize was shorter in SE group than in IM group (35 days vs 67 days, P<0.001).
- Six (21.4%) and three (12.5%) women treated by SE and IM respectively finally required secondary interventions.
- ROC curve analysis for the trends in post-treatment day 0-4, day 4-7, day 0-7 bHCG did not show statistically significant AUCs, in predicting secondary interventions after either SE or IM primary treatment.

CONCLUSION:

- Our gynaecologists were more likely to advise IM for exogenous or viable CSP, or those with higher pre-treatment HCG level, and were prepared to have longer follow-up period for bHCG drop than for those first treated by SE.
- Trend in post-treatment bHCG was not a good or sole predictor for secondary interventions.