RESEARCH LETTER

Reported Pregnancy Outcomes after Biologic Therapy Exposure in Hidradenitis Suppurativa: A Systematic Review of Published Cases

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Dear Editor,

Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease that predominantly affects women of reproductive age (1). Disease flares during pregnancy are common, yet evidence guiding the use of biologic therapy in pregnant patients with HS is scarce (1). We conducted a systematic review to summarize published maternal, fetal and neonatal outcomes reported after biologic exposure in pregnant patients with HS, representing, to our knowledge, the most comprehensive systematic synthesis of available published evidence on this topic to date, although smaller narrative reviews have previously addressed this issue.

This review was conducted in accordance with PRISMA guidelines and prospectively registered in PROSPERO (CRD420251107463). MEDLINE, Embase, Scopus and Web of Science were searched from inception to 1 January 2026, using predefined search terms (Table SI). Studies reporting pregnancy outcomes in patients with HS exposed to biologic therapy during pregnancy or within 3 months before conception. Two reviewers independently screened studies and assessed risk of bias using the ROBINS-I tool (Table SII). Additional methodological details are provided in the Supplementary Material.

Seven articles describing 11 pregnancies met inclusion criteria (**Table I**; Fig. S1). All included studies were judged to be at high risk of bias. Patient and treatment characteristics are summarized in **Table II**. The mean maternal age was 33 years (range, 23–36), and most patients (87.5%) had Hurley stage III disease. The biologic agents most frequently used were adalimumab and certolizumab pegol. Three patients switched from adalimumab to certolizumab during pregnancy, mainly because of concerns regarding placental transfer. Five patients (45.5%) continued biologic therapy throughout pregnancy, whereas 4 (36.4%) were exposed exclusively during the first

Table I. Characteristics of included studies and main pregnancy outcomes reported in women with hidradenitis suppurativa (HS) exposed to biologic therapy during pregnancy

First author, year	Study design	Number of pregnancies and patients exposed/mean age or range; comorbidities and conditions	Biologic therapy, dosage (mg) and frequency (weeks)	Exposure interval or timing of last biologic dose	Anti-HS systemic treatments before or during pregnancy (other biologics and no-biologics)	Pregnancy, fetal or neonatal outcomes	Live births (%) / Total abortions (%)
Boggs 2020	Case series	4 pregnancies in 4 women/31 years Crohn disease (*n*=1) Psoriasis and PsA (n=1) Hurley stage III HS (*n*=1)	Infliximab (*n*=2) Adalimumab (*n*=1) Ustekinumab (*n*=1)	Throughout pregnancy (*n*=2) Discontinued after pregnancy recognition (*n*=2)	N/A	Live term birth without complications (*n*=4) HS flare after biologic discontinuation (*n*=1) Caesarean section due to severe genital HS (*n*=1)	4 (100) / 0 (0)
Gisondi 2025	Case report	1 pregnancy in 1 woman/32 years Hurley stage III HS	Certolizumab pegol 400 mg SC at weeks 0, 2, and 4, followed by 200 mg every 2 weeks	From week 20 of gestation throughout pregnancy; continued during lactation with 2 year follow-up	Previous: adalimumab During pregnancy: adalimumab (discontinued after pregnancy recognition), oral clindamycin 300 mg twice daily for 4 weeks	Gestational diabetes premature rupture of membranes Live term birth without complications	1 (100) / 0 (0)
Kok 2021	Case report	1 pregnancy in 1 woman/N/A Hurley stage III HS	Tildrakizumab 100 mg at weeks 0 and 4, followed by 200 mg every 4 weeks	Discontinued after pregnancy recognition	N/A	No pregnancycomplications or fetal abnormalities	1 (100) / 0 (0)
Melgosa Ramos 2022	Case report	1 pregnancy in 1 woman/33 years Hurley stage II HS Obesity Crohn disease	Certolizumab pegol 400 mg SC at weeks 0, 2 and 4, followed by 200 mg every 2 weeks	From week 13 of gestation throughout pregnancy	Previous: adalimumab. During pregnancy: adalimumab until week 13 of gestation	No obstetric complications	1 (100) / 0 (0)
Repetto 2021	Case series	2 pregnancies in 2 women/33 years Psoriasis (*n*=2) IHS4 score 8 (*n*=1), 11 (*n*=1)	Certolizumab pegol 200 mg SC every 2 weeks	Throughout pregnancy (*n*=2)	Previous: adalimumab 40 mg weekly for approximately 2 years	Live birth without complications (*n*=2)	2 (100) / 0 (0)
Samuel 2018	Case report	1 pregnancy in 1 woman/36 years Morbid obesity	Adalimumab	Six months prior to pregnancy; discontinued after pregnancy recognition	Previous: steroid injections and adalimumab During pregnancy: oral antibiotics, IV antibiotics, wide local debridement and excision of the affected area	HS flare after biologic discontinuation Live birth without complications	1 (100) / 0 (0)
Wohlmuth-Wieser 2021	Case report	1 pregnancy in 1 woman/34 years Obesity Hurley stage III HS (IHS4 score: 44)	Certolizumab pegol 200 mg SC every 2 weeks; increased to 400 mg SC weekly at 32 weeks' gestation	From week 19 of gestation throughout pregnancy	Previous: antibiotics, repeated surgeries, clindamycin 300 mg, rifampicin 600 mg for 1 month, adalimumab 40 mg weekly SC During pregnancy: adalimumab (discontinued at 6 weeks' gestation)	Live term birth without complications	1 (100) / 0 (0)

All outcomes were author-reported; no study used predefined or standardized obstetric and neonatal outcome definitions, and long-term paediatric follow-up was inconsistently reported.
HS: hidradenitis suppurativa; IV: intravenous; N/A: not available/not applicable; PsA: psoriatic arthritis; SC: subcutaneous.

Table II. Characteristics and outcomes of pregnancies exposed to biologic therapy used for treatment of hidradenitis suppurativa (HS)

Maternal clinical characteristics	Frequency, *n* (%)*
Number of pregnant women exposed to biologics	11 (100.0)
Mean age in years (SD) (*n*=10)	33.17 (1.7)
Age range	23–36
Age at HS diagnosis, mean (SD) (*n*=2)	21 (12.7)
Comorbidities[a,b]	
Psoriasis (*n*=10)	3 (30.0)
Psoriatic arthritis (*n*=10)	1 (10.0)
Crohn's disease (*n*=10)	2 (20.0)
Obesity (*n*=6)	4 (66.7)
Body mass index, kg/m^2, mean (SD) (*n*=3)	38.3 (11.2)
Tobacco use (current) (*n*=6)	0 (0.0)
Hypertension (*n*=6)	0 (0.0)
Diabetes mellitus (*n*=6)	0 (0.0)
Dyslipidaemia (*n*=6)	0 (0.0)
Other diseases (*n*=6)	0 (0.0)
Previous abortions (*n*=6)	0 (0.0)
Age at initiation of biologic treatment, mean (SD) (*n*=5)	33.25 (2.5)
Disease severity before initiation of biologic therapy[a]	
Hurley II (*n*=8)	1 (12.5)
Hurley III (*n*=8)	7 (87.5)
IHS4, mean (SD) (*n*=4)	22 (19.1)
Pain NRS, value (*n*=1)	9
Dermatology life quality index, value (*n*=1)	28
Physician Global Assessment, value (*n*=1)	4
Systemic treatments prior to pregnancy (*n*=6)[b]	
Adalimumab	6 (100.0)
Clindamycin	1 (16.7)
Rifampicin	1 (16.7)
Drainage	1 (16.7)
Corticosteroid injection	1 (16.7)
Previous treatments, mean (SD) (*n*=6)	1.8 (1.3)
Pregnancy characteristics	Frequency, *n* (%)*
Biologics used during pregnancy (*n*=11)[b]	
Adalimumab	5 (45.5)
Certolizumab[c]	5 (45.5)
Other biologics[d]	4 (36.4)
Classical concomitant treatments during pregnancy (*n*=6)[b]	
Oral or intravenous antibiotic treatment	3 (50.0)
Local debridement	1 (16.7)
Exposure within 3 months before conception (*n*=11)	9 (81.8)
Trimester of exposure (*n*=11)	
1st trimester	4 (36.4)
2nd and 3rd trimester	1 (9.1)
1st, 2nd and 3rd trimester[e]	1 (9.1)
Throughout pregnancy[e]	5 (45.5)
Maintained during breastfeeding (*n*=1)	1 (100.0)
Discontinuation of biologic therapy (*n*=11)	6 (54.6)
Exposure interval during pregnancy in weeks, mean (SD) (*n*=5)	29 (9.1)
Maternal and pregnancy outcomes	Frequency, *n* (%)*
Maternal complications during pregnancy and postpartum period (*n*=11)	
HS flare during pregnancy	7 (63.6)
Gestational diabetes	1 (9.1)
Other maternal complication	0 (0.0)
Type of delivery (*n*=6)	
Vaginal	5 (83.3)
Elective caesarean	1 (16.7)
Pregnancy outcomes (*n*=11)	
Live births	11 (100.0)
Spontaneous or elective abortions	0 (0.0)
Neonatal outcomes (*n*=11)	
Congenital malformations	0 (0.0)
Adverse neonatal outcome	0 (0.0)
Abnormal long-term growth and development (*n*=7)	0 (0.0)
Gestational age at birth, weeks, mean (SD) (*n*=6)	38.67 (1.5)

*Unless otherwise noted.
[a]Denominators vary due to missing data (as reported in original publications). [b]Percentages may exceed 100% because patients could receive more than one treatment or have more than one comorbidity. [c]Three patients switched from adalimumab to certolizumab during pregnancy. [d]Other biologics: infliximab (n=2), ustekinumab (*n*=1), tildrakizumab (*n*=1). [e]Continuous exposure throughout pregnancy was defined as uninterrupted biologic therapy during the first, second, and third trimesters. Exposure during the first, second and third trimesters indicates treatment administration across all trimesters with at least one interruption during pregnancy.
Definitions of obstetric and neonatal outcomes were heterogeneous across reports, and long-term infant follow-up was inconsistently available.
HS: Hidradenitis suppurativa; IHS4: International Hidradenitis Suppurativa Severity Score System; NRS: Numeric Rating Scale; SD: Standard deviation.

trimester. Overall, 6 patients (54.5%) discontinued biologic therapy at some point during gestation. The mean duration of biologic exposure was 29 weeks.

HS flares during pregnancy were the most commonly reported maternal event, particularly after treatment discontinuation. No miscarriages, congenital anomalies, or neonatal complications were reported among the 11 published pregnancies; however, these observations are limited by the very small sample size, lack of systematic follow-up, and a high likelihood of publication bias.

All included studies consisted of case reports or small case series and were not designed to primarily evaluate pregnancy outcomes associated with biologic exposure. The main sources of bias identified included small sample size, absence of control groups, selective outcome reporting, and incomplete assessment of key confounders such as disease severity, comorbidities and concomitant treatments (2, 3). Publication bias is likely, as uncomplicated pregnancies may be preferentially published. In addition, obstetric and neonatal outcomes were not systematically defined across reports, limiting comparability between studies. Follow-up was frequently short or inconsistently reported, and no included study systematically evaluated long-term paediatric outcomes beyond birth. Notably, no report described post-partum vaccination outcomes in infants exposed in utero to TNF-α inhibitors, despite the clinical relevance of placental drug transfer and current recommendations regarding live vaccines in exposed infants. Residual confounding related to HS severity, obesity, smoking and concomitant inflammatory comorbidities cannot be excluded and may independently influence pregnancy outcomes in this population. Although data from other dermatologic conditions, like psoriasis or atopic dermatitis, suggest no major pregnancy-related safety signals associated with biologic exposure, such findings cannot be directly extrapolated to HS (4, 5). Conversely, no published reports describe the use of newer HS biologics, such as secukinumab or bimekizumab, during pregnancy or lactation, and their safety profiles in pregnant and breastfeeding individuals remain unknown.

In conclusion, direct evidence regarding the safety of biologic therapy during pregnancy in patients with HS remains extremely limited. Although no adverse fetal outcomes were identified in the small number of published cases, the current evidence is insufficient to establish safety or inform definitive treatment recommendations, underscoring the need for prospective pregnancy registries and disease-specific studies in HS. In the absence of robust evidence, treatment decisions should balance maternal disease control against theoretical fetal risks, following biologic-specific pregnancy guidance and individualized multidisciplinary assessment.

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