

HIGH ANTI-MULLERIAN HORMONE (AMH) LEVELS DO NOT IMPACT LIVE DELIVERED
PREGNANCY RATES (LDPR) PER RETRIEVAL OR TRANSFER

Brooke Neumann DO¹, Jerome H. Check MD PhD ^{2,3}, Carrie Wilson MS³

(1) Inspira Health Network Vineland, NJ

(2) Cooper Medical School of Rowan University Camden, NJ

(3) Cooper Institute for Reproductive and Hormone Disorders, Mt Laurel, NJ

Background: Previous literature suggests high anti-Mullerian hormone (AMH), specifically ≥ 5 ng/mL, has a negative effect on pregnancy rates following in vitro fertilization transfer (IVF-ET) (1).

Objective: Objective: The aim of this study was to determine if women with increased serum AMH levels (≥ 5 ng/mL) have a lower live delivered pregnancy rate per transfer than women with serum AMH between 1 and 4.99, and to evaluate the confounding effect of advancing age. Furthermore, if this study does corroborate other studies suggesting lower pregnancy rates in an in vitro fertilization embryo transfer (IVF-ET) cycle, the study would uniquely evaluate whether a lower live delivered pregnancy rate (LDPR) per transfer may be compensated related to more embryos i.e, frozen, thawed being transferred in subsequent cycles without undergoing another oocyte retrieval.

Materials & methods: Women undergoing IVF-ET between the years of 2015-2023 were stratified by serum AMH ranges. ($> 1-2.99$, $> 3-4.99$, $\geq 5-7.99$ and a subset ≥ 8 ng/mL). They were also stratified by age (≤ 35 , 36-39, 40-44). LDPRs were recorded as seen in Table 1. LDPR was also calculated. The first frozen transfer would count as a woman's first transfer cycle if a fresh embryo transfer could not be completed if there was concern about the risk of the ovarian hyperstimulation syndrome.

Results: The results are seen in the table below.

Table 1: Live delivered pregnancy rate per retrieval and transfer for women according to 4 serum AMH range and by three different ranges.

		AMH ≥ 1 - ≤ 2.99	AMH ≥ 3 - ≤ 4.99	AMH ≥ 5	AMH ≥ 8
≤ 35 years old	LDPR per retrieval	54.6% (100/183)	66.3% (69/104)	66.7% (84/126)	73.7% (42/57)
	LDPR per transfer	36.8% (100/272)	39.9% (69/173)	39% (84/215)	43% (42/97)
36-39 years old	LDPR per retrieval	41.2% (56/136)	48.9% (22/45)	48.6% (17/35)	66.7% (8/12)
	LDPR per transfer	32.4% (56/173)	40% (22/55)	32% (17/53)	38% (8/21)
40-44 years old	LDPR per retrieval	13.7% (20/145)	10.3% (3/29)	33.3% (6/18)	50% (1/2)
	LDPR per transfer	12.9% (20/155)	7.5% (3/40)	22% (6/27)	20% (1/5)

Results: There were no significant differences in the LDPR per transfer or retrieval with higher serum AMH levels between any of the different age ranges or the subset of the age range of serum AMH ≥ 8 ng/mL.

Conclusion: High serum AMH levels do not have a negative impact on pregnancy rates per retrieval nor transfer by the method used by our IVF center for controlled ovarian hyper stimulation. Thus, we do not corroborate the findings of Acharya et al.

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References:

1. Acharya KS, Harris BS, Weber JM, Truong T, Pieper C, Eaton JL. Impact of increasing antimüllerian hormone level on in vitro fertilization fresh transfer and live birth rate. F S Rep. 2022 Jun 30;3(3):223-230. doi: 10.1016/j.xfre.2022.06.005. PMID: 36212572; PMCID: PMC9532892.