



Both AMH and Day 3 FSH Levels Predict IVF Stimulation Outcome Regardless of Patient Age; Day 3 Estradiol Levels Are Not Predictive.



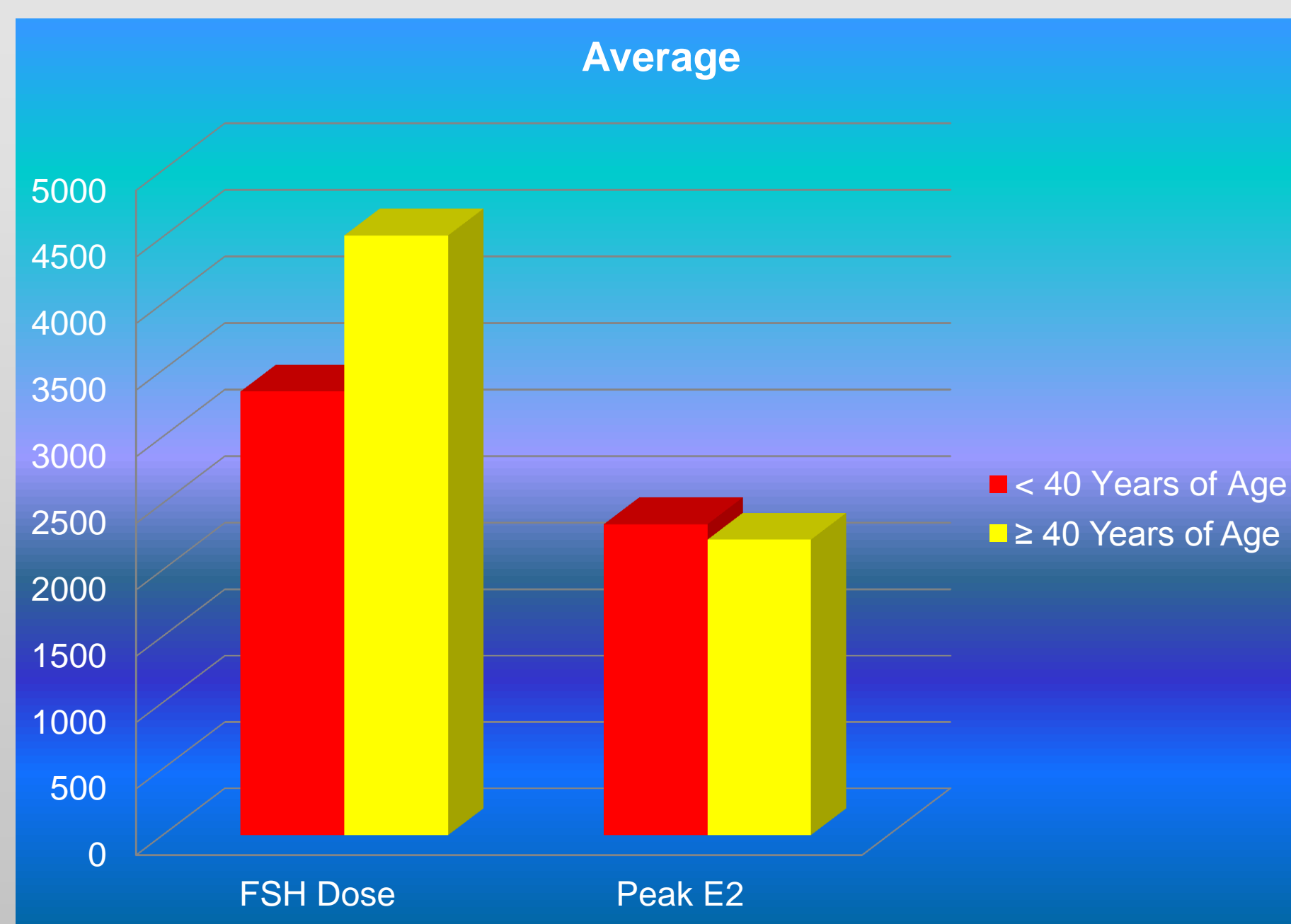
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Objective

Although several studies have assessed the relative values of anti-Mullerian hormone (AMH) levels and Day 3 FSH and estradiol (E2) levels as predictors of IVF outcome, there is limited data regarding the ability of these tests to predict response to stimulation by patient age. The objective of this study was to assess the ability of AMH and Day 3 FSH and E2 levels to predict response to stimulation both for younger and older patients undergoing IVF

Design

Prospective, comparative trial in a large private infertility practice.



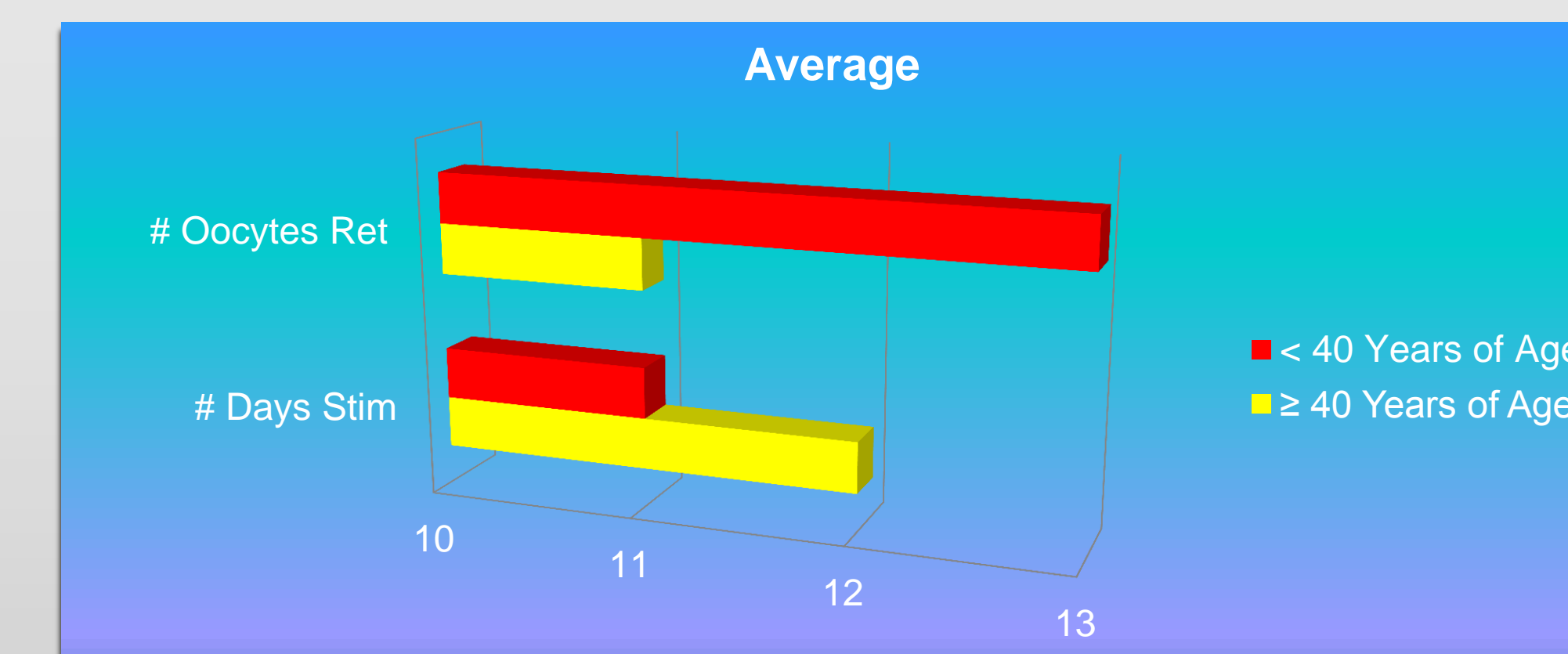
	Corr. Coeff	< 40 Yrs of Age	≥ 40 Yrs of Age	ANOVA
Day 3 FSH vs. AMH	-0.28535676	-0.3027004	-0.3725334	<0.01
Day 3 FSH vs. Total FSH Dose	0.490809347	0.52308733	0.49953729	<0.01
Day 3 FSH vs. # of Days Stimulated	0.312505155	0.33537784	0.26906769	<0.01
Day 3 FSH vs. Peak E2 Level	-0.31674702	-0.2451931	-0.4531258	<0.01
Day 3 FSH vs. # of Oocytes Ret	-0.3552713	-0.3166442	-0.4488891	<0.01
AMH vs. Total FSH Dose	-0.50791646	-0.490529	-0.4759319	<0.01
AMH vs. # of Days Stimulated	-0.00947385	0.02918667	0.01149555	NS
AMH vs. Peak E2 Level	0.485176766	0.48073041	0.74113004	<0.01
AMH vs. # of Oocytes Ret	0.607668753	0.5992683	0.77261769	<0.01

Materials & Methods

All patients (n=128) undergoing IVF had blood drawn for testing of Day 3 FSH and E2 levels, as well as an AMH level prior to starting oral contraceptives in the cycle preceding their actual IVF cycle. Patients were then treated with either Luprolide down regulation with recombinant FSH or a microdose flare protocol using leuprolide with recombinant FSH and recombinant LH. Ovidrel was administered when 2 follicles exceeded 19mm and retrieval was performed 36 hours later. Stimulation variables were compared using Pearson correlation and 2 way Anova.

Results

Day 3 FSH and AMH were significantly correlated with each other across all patient ages ($p < 0.01$). Day 3 E2 levels were not correlated with either Day 3 FSH or AMH levels. Day 3 FSH was predictive of total FSH dose, days of stimulation, peak estradiol level, and number of oocytes retrieved ($p < 0.01$). Although AMH predicted total FSH dose, peak estradiol level and the number of oocytes retrieved ($p < 0.01$), it did not correlate with the days of stimulation. These same findings held true for patients over and under the age of 40. Day 3 E2 levels were not predictive of any of the measured outcome variables.



Conclusion

AMH and Day 3 FSH levels predict response to IVF stimulation in patients undergoing IVF regardless of female age. Day 3 E2 levels are not predictive of outcome.