VARIATION OF ANTI-MULLERIAN HORMONE LEVELS FOLLOWING MYOMECTOMY BY LAPAROTOMY

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ABSTRACT

Introduction: To assess the impact of myomectomy by laparotomy on AMH level and to determine whether different myomectomy techniques have an influence on the variation of AMH.

Methods: Women 18 to 42 years of age who underwent myomectomy by laparotomy for fertility purposes at the Centre Hospitalier de l'Universite de Montreal (CHUM) from 2011-2014 were approached. AMH levels were measured preoperatively, 1 day and 6 weeks postoperatively. Patients with concomitant ovarian surgery, low ovarian reserve (AMH ≤0.3 ng/mL) preoperatively as well as those taking hormonal contraception or GnRH agonist in the 3 months prior to surgery were excluded. 21 patients were needed to obtain a power level of 90% with alpha error of 5%.

Results: Our preliminary results after recruitment of 18 patients, showed a significant decrease in the AMH value 1 day postoperatively (p = 0.001). However, a full recovery was noted 6 weeks after (p = 0.54). Moreover, there were no differences shown between the different bleeding control techniques. The amount of vasopressin used did not affect AMH value (p = 0.70) , nor did the duration of use of tourniquet (p = 0.29) or the duration of surgery (p = 0.095).

Conclusions: There is a transient decrease in the value of the AMH levels following a myomectomy with recovery of the AMH level at 6 weeks postoperatively. Therefore, myomectomy does not seem to have a deleterious effect on ovarian reserve. This study is still ongoing until the desired power level is reached.

OBJECTIVE

Our primary objective was to determine the impact of myomectomy by laparotomy on AMH level, a reliable marker of ovarian reserve[1]. Our secondary objective was to determine whether the hemostasis technique used during the myomectomy using vasopressin or tourniquet (including infundibulopelvic ligaments and the uterine arteries) or both influences the variation of AMH, considering that a tourniquet causes a temporary ovarian ischemia.

METHODS

We approached women 18 to 42 years of age who underwent myomectomy by laparotomy for fertility purposes at the CHUM from 2011-2014. AMH levels were measured preoperatively, 1 day and 6 weeks postoperatively. We also looked at several surgical factors such as the duration of surgery, the technique used for hemostasis whether it is the use of vasopressin injection into the myoma or the use of tourniquet or both. Patients with concomitant ovarian surgery, low ovarian reserve (AMH ≤0.3 ng/mL) preoperatively as well as those taking hormonal contraception or GnRH agonist in the 3 months prior to surgery were excluded. 21 patients were needed to obtain a power level of 90% with alpha error of 5%.

STATISTICS

AMH results are expressed as the median value, with the 1st and 3rd interquartile. Results are considered statistically significant with a p value <0.05.

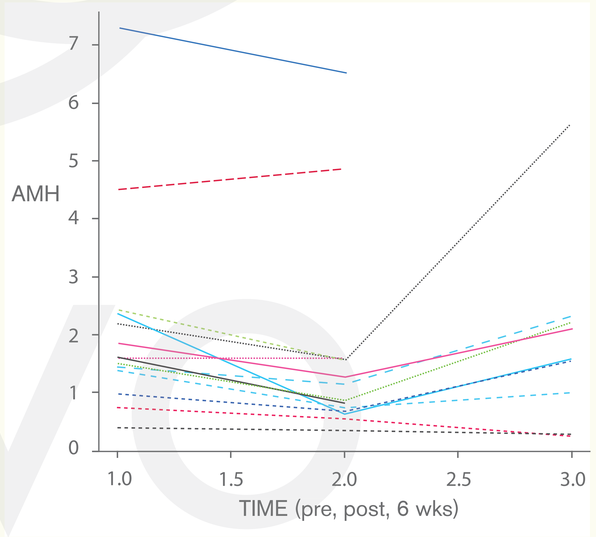
RESULTS

Table 1: AMH median value according to the type of procedure and the time from the intervention. (n=18)

	Time (PostOp)								
	0 days			1 day			6 wks		
	AMH			AMH			AMH		
	Q1	Median	Q3	Q1	Median	Q3	Q1	Median	Q3
Method Both	0.98	2.36	2.43	0.64	0.72	1.56	1.00	1.57	1.59
Tourniquet	1.44	1.62	2.46	0.82	1.21	1.60	0.84	1.77	2.22
Vasopressin	1.58	1.92	3.29	0.86	1.23	1.59	1.72	3.61	5.33

Q1: 1st interquartile, Q3: 3rd interquartile

Figure 1. AMH evolution by patient



CONCLUSION

In this study we assessed AMH variation after a myomectomy in order to see if this procedure has an impact on AMH, a marker of ovarian reserve. We noticed that there is a decline in AMH value immediately after the surgery, and the difference is statistically significant (p=0.001). However this is transient since 6 weeks post-operatively, the AMH value returned to its original value (p=0.54).

In our analysis, we looked at the type of procedure, and our preliminary results show that there was no difference in the AMH variation whether vasopressin or tourniquet were used intra-operatively. We also found that the amount of vasopressin used, the duration of tourniquet as well as the duration of procedure have no significant impact on the AMH value 6 weeks after the surgery.

These results are promising as they show that undergoing a myomectomy does not seem to have a deleterious effect on ovarian reserve. However these are preliminary data, the study is still ongoing and we are still recruiting patients in order to get to the desired power level.

REFERENCE

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