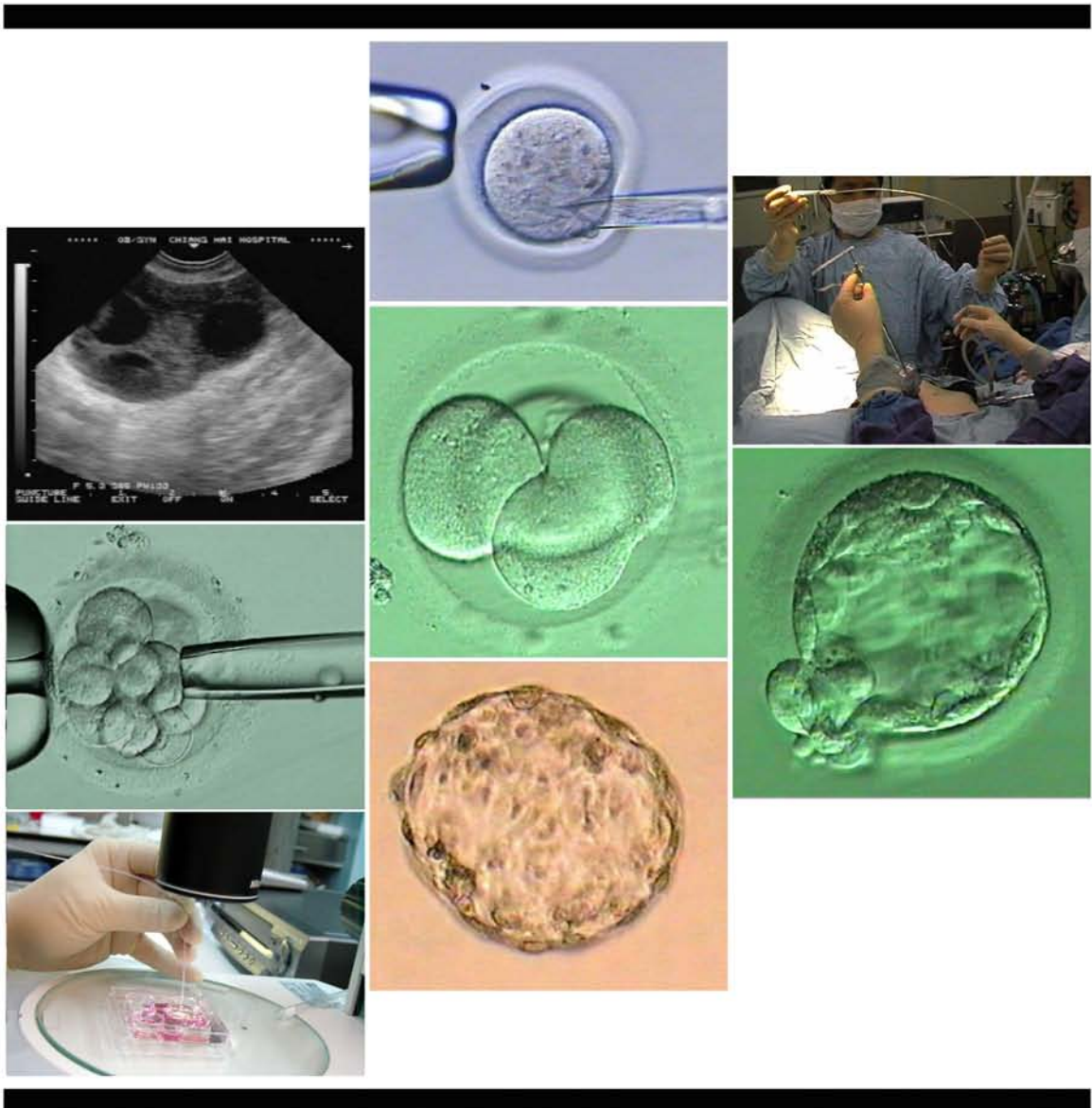


# Annual Report

## 2013



Division of Reproductive Medicine  
Department of Obstetrics & Gynecology  
Faculty of Medicine, Chiang Mai University  
Chiang Mai, Thailand

# ANNUAL REPORT 2013

Division of Reproductive Medicine  
Department of Obstetrics and Gynecology  
Faculty of Medicine  
Chiang Mai University  
Chiang Mai, Thailand

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Data collected and reported by: Rung-aroon Sreshthaputra MSc.

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# รายงานประจำปี พ.ศ. 2556

หน่วยเวชศาสตร์การเจริญพันธุ์  
ภาควิชาสูติศาสตร์และนรีเวชวิทยา  
คณะแพทยศาสตร์  
มหาวิทยาลัยเชียงใหม่

หัวหน้าหน่วย

อาจารย์ประจำหน่วย

อาจารย์พิเศษ

แพทย์หลักสูตรต่อยอด

พยาบาลวิจัยประจำหน่วย

พยาบาลประจำห้องตรวจ

นักเทคนิคการแพทย์

รวบรวมและจัดทำรายงาน

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รุ่งอรุณ เศรษฐบุตร

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สุดารัตน์ สามฉิมโฉม

วรินดา พุนทวิรัตน์

รุ่งอรุณ เศรษฐบุตร

# Preface

The Department of Obstetrics and Gynaecology was founded in 1958, the same time as the establishment of Faculty of Medicine which is the third medical school in Thailand. The Faculty of Medicine and Maharaj Nakorn Chiangmai Hospital, Chiangmai University has grown continuously and become the biggest medical school in Northern Thailand. The department consists of 26 staff responsible for teaching and training of 33 residents, 13 clinical fellows, 4 interns and 739 medical students. There is also a growing number of visiting residents, clinical fellows, interns and medical students from others departments and institutes.

This annual report shows data from the Reproductive Medicine Division. This includes patients coming with fertility, endocrine and endometriosis problems. In addition to out-patient consultations, there are also cases with endoscopic procedures, i.e. laparoscopes and hysteroscopes, and fertility related operations. The unit has the facility to provide assisted conception service to cope with the increasing demand. Associate Professor Supreeya Wongtra-ngan is the new head of the division following Professor Teraporn Vutyavanich who has just retired in November 2013.

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# Preface

The Division of Reproductive Medicine is actively involved in the teaching and training of medical students, residents and fellows in the subspecialty of reproductive medicine. The division is also engaged in conducting researches related to the field of human reproduction. It serves as a resource and referral center for provincial and other tertiary care centers in Northern Thailand.

In this annual report, we summarized our services related to reproductive surgery and infertility that were provided in the year 2013. This report was compiled with the help of many other team members from the operating room, in-patient and outpatient department, and the assisted conception laboratory. I would like to thank all team members for their kind contribution and dedication.

It is hoped that this annual report will be useful as a reference, and a benchmark for future improvement of our services.

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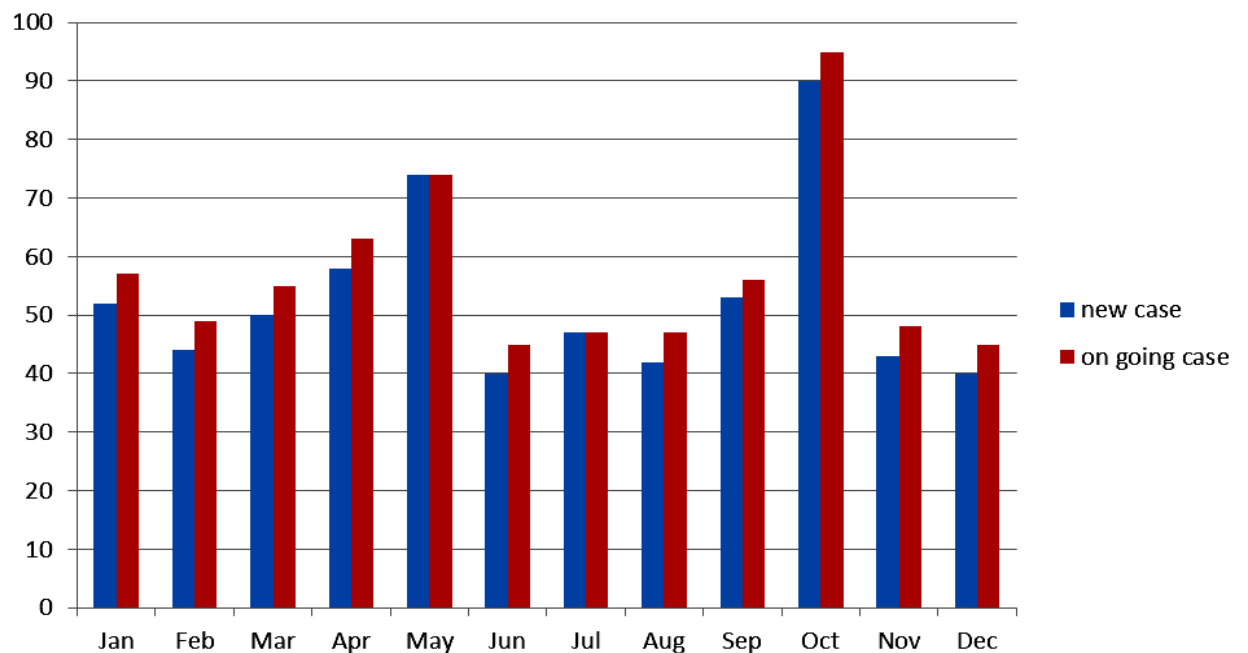
**PART I****NUMBER OF ATTENDED PATIENTS IN 2013**

- Infertile patients
- Gynecologic endocrine patients
- Endometriosis patients

## I. Number of infertile patients

Month	New case (cases)	On going case (visits)
January	57	60
February	49	51
March	55	82
April	63	65
May	74	92
June	45	63
July	47	71
August	47	73
September	56	53
October	95	89
November	48	76
December	45	66
<b>Total</b>	<b>681</b>	<b>841</b>

### Percent



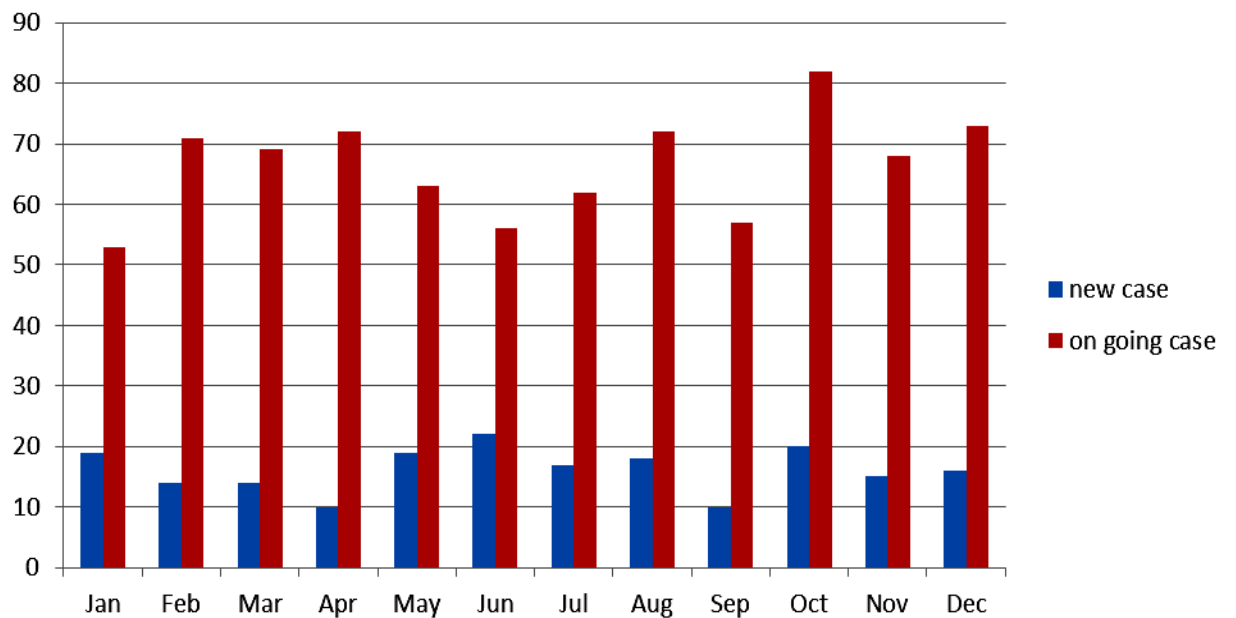
**Figure I.** Number of Infertile patients per month



## II. Number of gynecologic endocrine patients

Month	New case (cases)	On going case (visits)
January	19	53
February	14	71
March	14	69
April	10	72
May	19	63
June	22	56
July	17	62
August	18	72
September	10	57
October	20	82
November	15	68
December	16	73
<b>Total</b>	<b>194</b>	<b>798</b>

### Percent

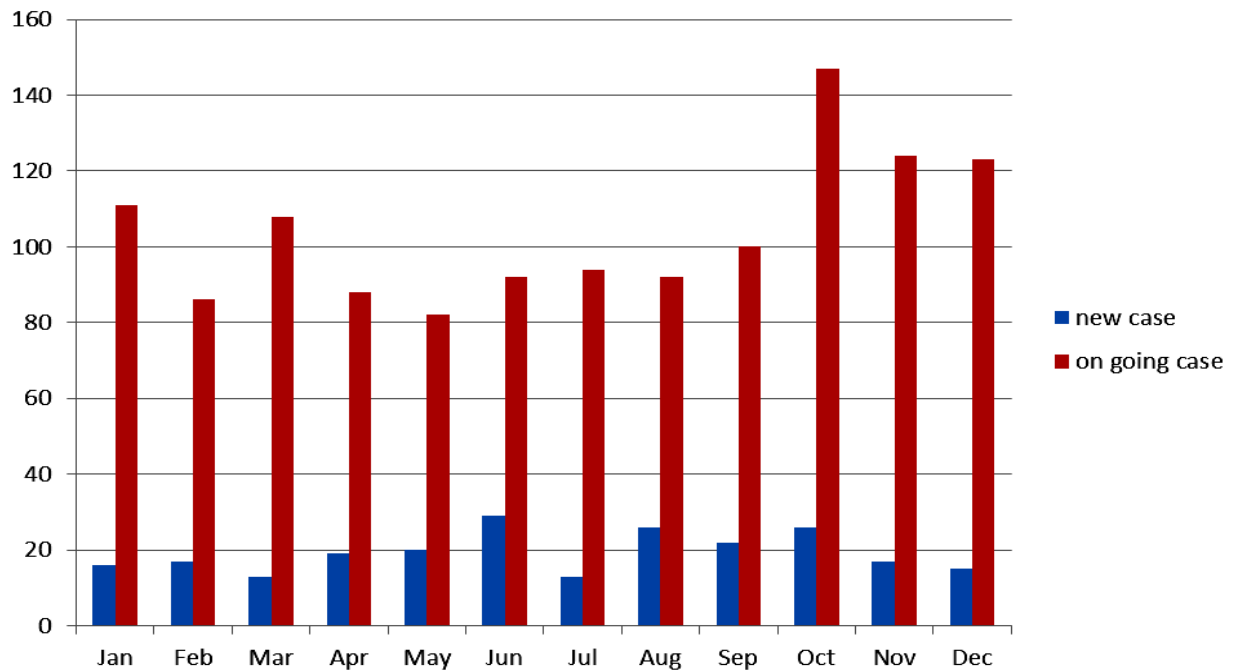


**Figure II.** Number of endocrine patients per month

### III. Number of endometriosis patients

Month	New case (cases)	On going case (visits)
January	16	111
February	17	86
March	13	108
April	19	88
May	20	82
June	29	92
July	13	94
August	26	92
September	22	100
October	26	147
November	17	124
December	15	123
<b>Total</b>	<b>233</b>	<b>1247</b>

#### Percent



**Figure III.** Number of endometriosis patients per month

**PART II****BASELINE CHARACTERISTICS AND DIAGNOSIS  
OF  
NEW & ON-GOING INFERTILE CASES IN 2013**

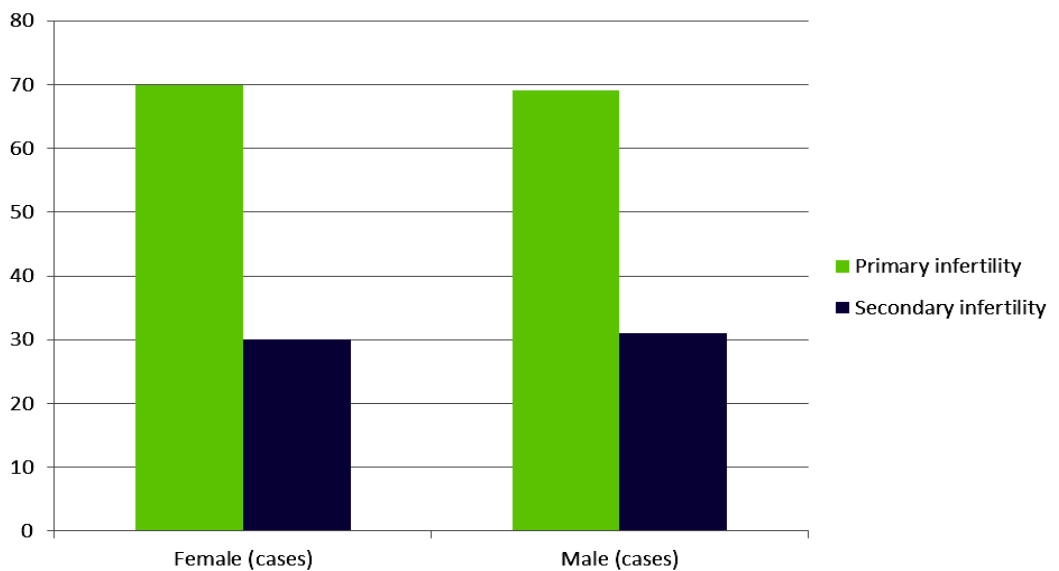
## I. Age, duration of marriage & infertility

		Mean $\pm$ SD	Range
Age	Female (years)	32.7 $\pm$ 5.8	18 - 45
	Male (years)	34.0 $\pm$ 6.7	20 - 57
Duration of marriage (months)		72.9 $\pm$ 54.3	12 - 276
Duration of infertility (months)		58.8 $\pm$ 51.6	12 - 264

## II. Infertility status

Status	Female (cases)	Male (cases)
Primary infertility	284 (69.9%)	178 (69.0%)
Secondary infertility	107 (30.1%)	80 (31.0%)
<b>Total</b>	<b>355</b>	<b>258</b>

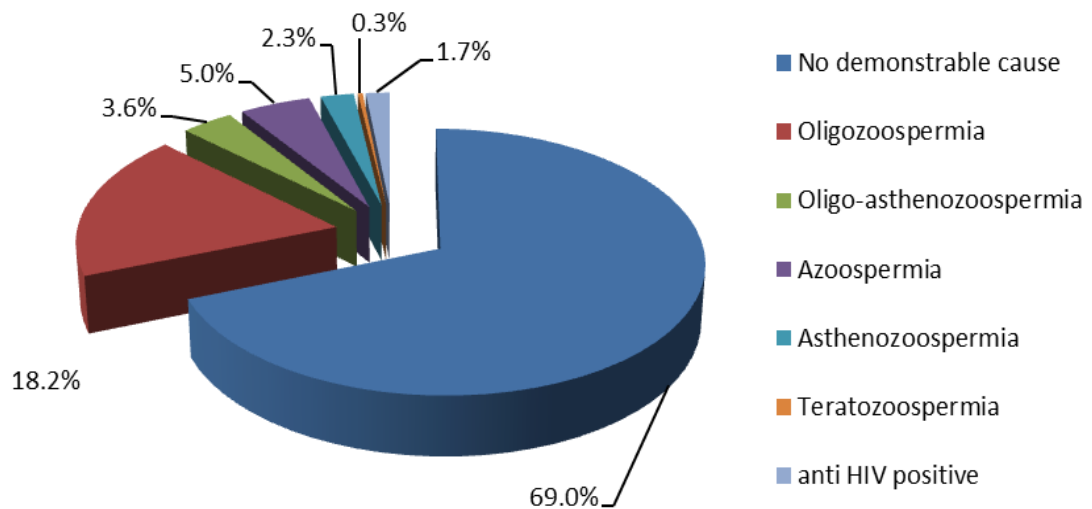
### Percent



**Figure IV.** Infertility status

### III. Diagnosis of male partners

Diagnosis	Number	Percent
No demonstrable cause	209	69.0
Oligozoospermia	38	12.5
Severe Oligozoospermia	17	5.6
Azoospermia	15	5.0
Oligo-asthenozoospermia	9	3.0
Asthenozoospermia	7	2.3
Severe Oligo & asthenozoospermia	2	0.7
Teratozoospermia	1	0.3
anti HIV positive	5	1.7
<b>Total</b>	<b>303</b>	<b>100</b>

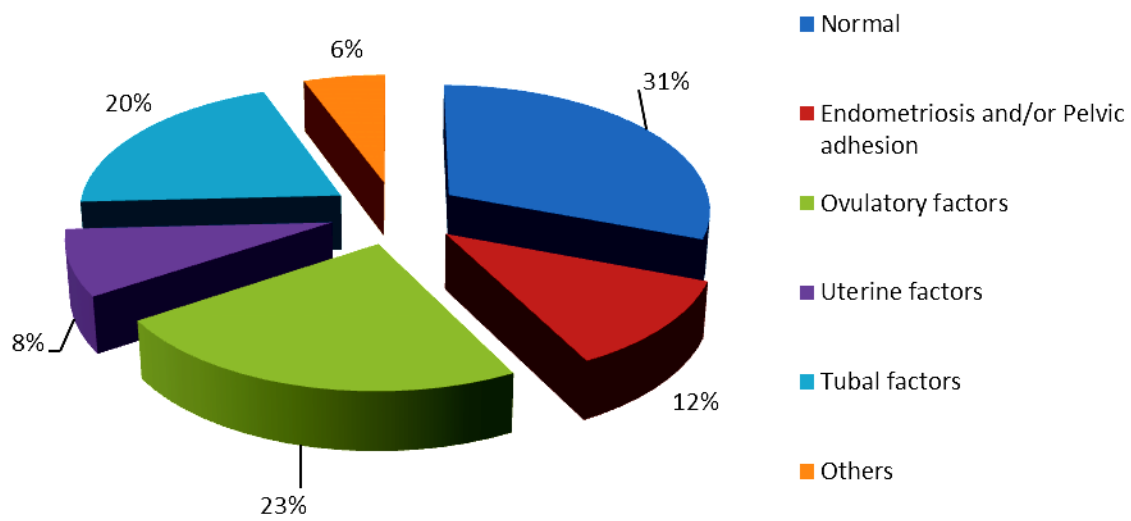


**Figure V.** Diagnosis of male partners

#### **IV. Diagnosis of female partners**

<b>Diagnosis</b>	<b>Number</b>	<b>Percent</b>
No demonstrable cause	87	30.7
Endometriosis	30	10.6
Pelvic adhesion	3	1.1
PCO	26	9.2
Irregular menorrhoea + ovulation	21	7.4
Impaired ovarian reserve	10	3.5
Hyperprolactinemia	6	2.1
Abnormal PCT	1	0.4
Premature ovarian failure	1	0.4
poor responder	1	0.4
Myoma Uteri / Adenomyosis	20	7.1
bicornuated / septate uterus	2	0.7
Intrauterine adhesion	2	0.7
Post TR	33	11.7
Bilat tubal occlusion	13	4.6
Unilateral tubal obstruction	11	3.9
HIV serodiscordant	5	1.8
Habitual abortion	4	1.4
Systemic causes	7	2.5
<b>Total*</b>	<b>283</b>	<b>100</b>

\* Total number of female partners who had completed investigation



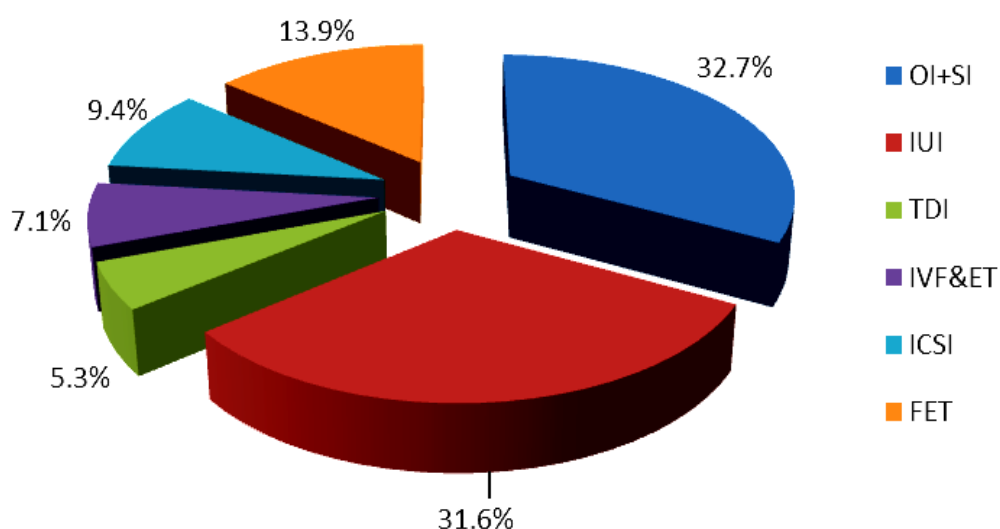
**Figure VI.** Diagnosis of female partners

**PART III****TREATMENT OF INFERTILE COUPLES IN 2013**



## I. Distribution of overall treatments of infertility in 2013

Treatment	Number (cycles)	Percent
Ovulation induction and timing sexual intercourse (OI+SI)	87	32.7
Intrauterine insemination (IUI)	84	31.6
Therapeutic insemination using frozen donor spermatozoa (TDI)	14	5.3
In vitro fertilization and embryo transfer (IVF & ET)	19	7.1
Intracytoplasmic sperm injection (ICSI)	25	9.4
In vitro maturation (IVM)	-	-
Frozen-thawed embryos transfer (FET)	37	13.9
Gamete intrafallopian transfer (GIFT)	-	-
Zygote intrafallopian transfer (ZIFT)	-	-
Direct intraperitoneal insemination (DIPI)	-	-
<b>Total cycles of treatment</b>	<b>266</b>	<b>100</b>



**Figure VII.** Percent of infertility treatments

## II. Number of intrauterine insemination and A.R.T cycles per month

Month	IUI	TDI	IVF	IVM	ICSI	FET
January	8	1	-	-	1	3
February	4	3	1	-	-	2
March	8	3	6	-	3	3
April	5	-	-	-	1	6
May	7	2	3	-	2	3
June	8	2	-	-	1	3
July	6	-	1	-	2	1
August	4	-	1	-	5	4
September	3	-	-	-	2	3
October	9	-	3	-	3	6
November	14	1	2	-	3	3
December	8	2	2	-	2	-
<b>Total</b>	<b>84</b>	<b>14</b>	<b>19<sup>a</sup></b>	<b>-</b>	<b>25<sup>b</sup></b>	<b>37</b>
<b>Clinical pregnancy rate (percent)</b>	<b>14.3<sup>c</sup></b>	<b>7.1<sup>c</sup></b>	<b>46.7<sup>d</sup></b>	<b>-</b>	<b>15.8<sup>d</sup></b>	<b>18.9<sup>d</sup></b>

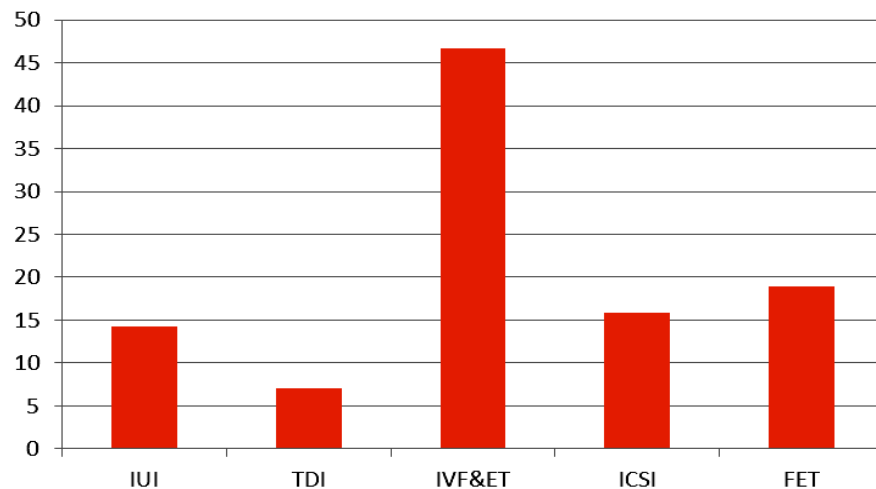
Remark: <sup>a</sup> embryo transfer was not done in 4 cases

<sup>a</sup> embryo transfer was not done in 6 cases

<sup>c</sup> pregnancy rate per cycle

<sup>d</sup> pregnancy rate per transferred cycle

### Percent



**Figure VIII.** Pregnancy rate of infertility treatments

**PART IV****ASISSTED REPRODUCTIVE TECHNOLOGY  
LABORATORY REPORT**

### **I. In vitro fertilization (IVF) cycle**

<b>IVF cycle</b>	<b>mean <math>\pm</math> SD (per cycle)</b>	<b>Range (per cycle)</b>	<b>Total (per year)</b>
Age of patient (years)	36.2 $\pm$ 3.2	31 – 42	19 cycles
Number of oocyte retrieved	9.9 $\pm$ 4.7	3 – 19	179 oocytes
Number of normal fertilization	5.7 $\pm$ 4.0	1 – 15	108 embryos
Fertilization rate			60.3 %
Number of cleavage stage embryo	5.3 $\pm$ 3.6	1 - 12	101 embryos
Cleavage rate			93.5 %
Number of embryo transfer	1.8 $\pm$ 1.2	0 - 3	35 embryos
Number of embryo freezing	3.7 + 3.5	0 - 10	70 embryos

### **II. Intracytoplasmic sperm injection (ICSI) cycle**

<b>ICSI cycle</b>	<b>mean <math>\pm</math> SD (per cycle)</b>	<b>Range (per cycle)</b>	<b>Total (per year)</b>
Age of patient (years)	35.0 $\pm$ 5.0	25 – 43	25 cycles
Number of oocyte retrieved	9.6 $\pm$ 7.2	2 – 37	241 oocytes
Number of M II oocytes retrieved	7.8 $\pm$ 5.4	2 – 27	196 oocytes
Number of normal fertilized embryos	4.2 $\pm$ 2.1	0 – 18	106 embryos
Fertilization rate			54.1 %
Number of cleavage stage embryo	3.9 $\pm$ 2.1	0 - 7	97 embryos
Cleavage rate			91.5 %
Number of embryo transfer	1.9 $\pm$ 1.4	0 - 6	45 embryos
Number of embryo freezing	2.2 + 2.1	0 - 7	53 embryos

### III. Frozen thawed embryo (FET) transfer

<b>Frozen-thawed Embryo transfer cycle (FET)</b>	<b>mean <math>\pm</math> SD (per cycle)</b>	<b>Range (per cycle)</b>	<b>Total (per year)</b>
Age of patient (years)	34.3 $\pm$ 5.7	26 – 48	37 cycles
Number of embryo thawing	2.4 $\pm$ 0.9	1 – 4	89 embryos
Number of embryo transfer	2.1 + 0.7	1 – 4	79 embryos
Survival rate of thawed embryos			88.8 %

## IV.

IV. Pregnancy outcome by type of A.R.T. and age group of female patients

## Fresh embryos transfer cycle (IVF cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Pregnancy (ies)
<34	3	2	1
≥34-39	13	11	6
≥40	3	2	0
<b>total</b>	<b>19</b>	<b>15</b>	<b>7</b>

## Fresh embryos transfer cycle (ICSI cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Pregnancy (ies)
<34	10	7	1
≥34-39	8	7	6
≥40	7	5	0
<b>total</b>	<b>25</b>	<b>19</b>	<b>7</b>

## Frozen embryos transfer cycle

Age (years)	Number of ET cycle	Pregnancy (ies)
<34	19	4
≥34-39	11	2
≥40	7 <sup>*</sup>	1 <sup>**</sup>
<b>total</b>	<b>37</b>	<b>7</b>

\* 2 cases were egg donation

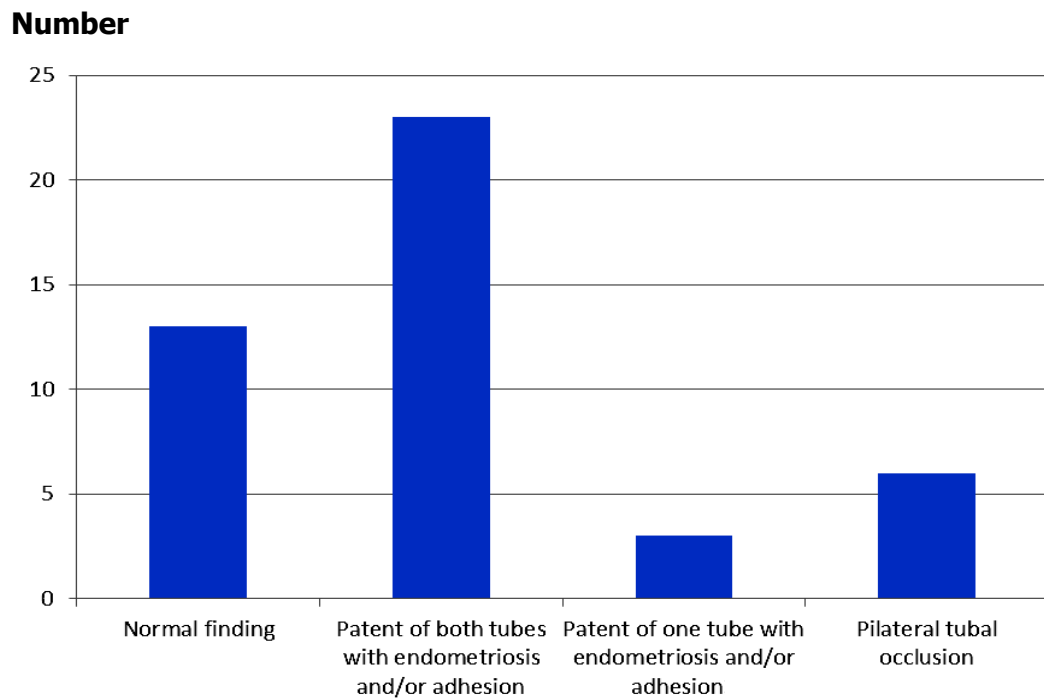
\*\* egg donor

**PART V****ENDOSCOPIC PROCEDURES  
&  
OTHER SURGERIES**

## I. Laparoscopic examination findings in infertile patients

Finding	Number
Normal finding with patent of both tubes	13
Patent of both tubes with minimal/ mild endometriosis +/- pelvic adhesion	12
Patent of both tubes with minimal/ mild pelvic adhesion	11
Patent of one tube with minimal endometriosis & pelvic adhesion	3
Bilateral tubal obstruction	5
Bilateral tubal obstruction S/P TR	1
<b>Total</b>	<b>45</b>

*remark : cauterization was done in case of minimal and mild endometriosis  
lysis adhesion was done in case of pelvic adhesion*



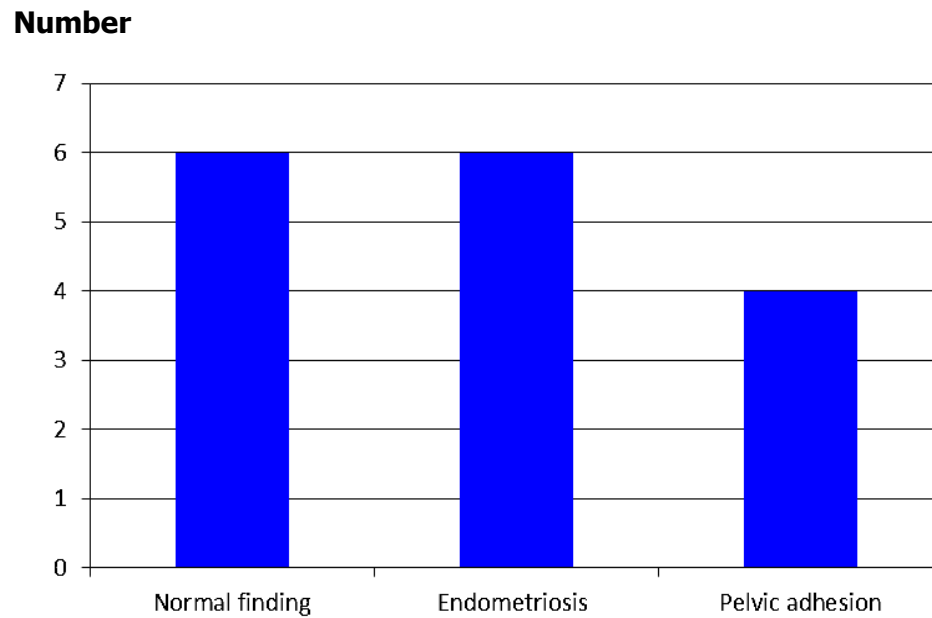
**Figure IX.** Laparoscopic findings in infertile patients



**II. Laparoscopic examination findings in gynecologic patients with dysmenorrhea / chronic pelvic pain**

Finding	Number
Normal finding	6
Endometriosis	6
Pelvic adhesion	4
<b>Total</b>	<b>16</b>

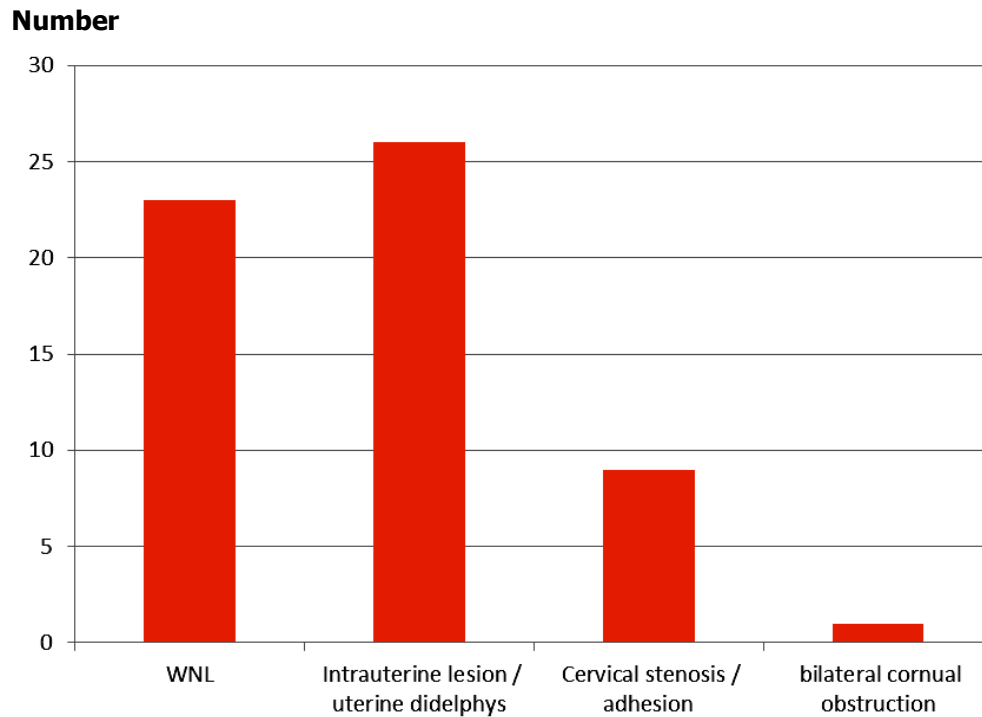
*cauterization of endometriotic spot and/or lysis adhesion was done during the procedure*



**Figure X.** Laparoscopic findings in gynecologic patients

### **III. Hysteroscopic findings & procedures in infertile patients**

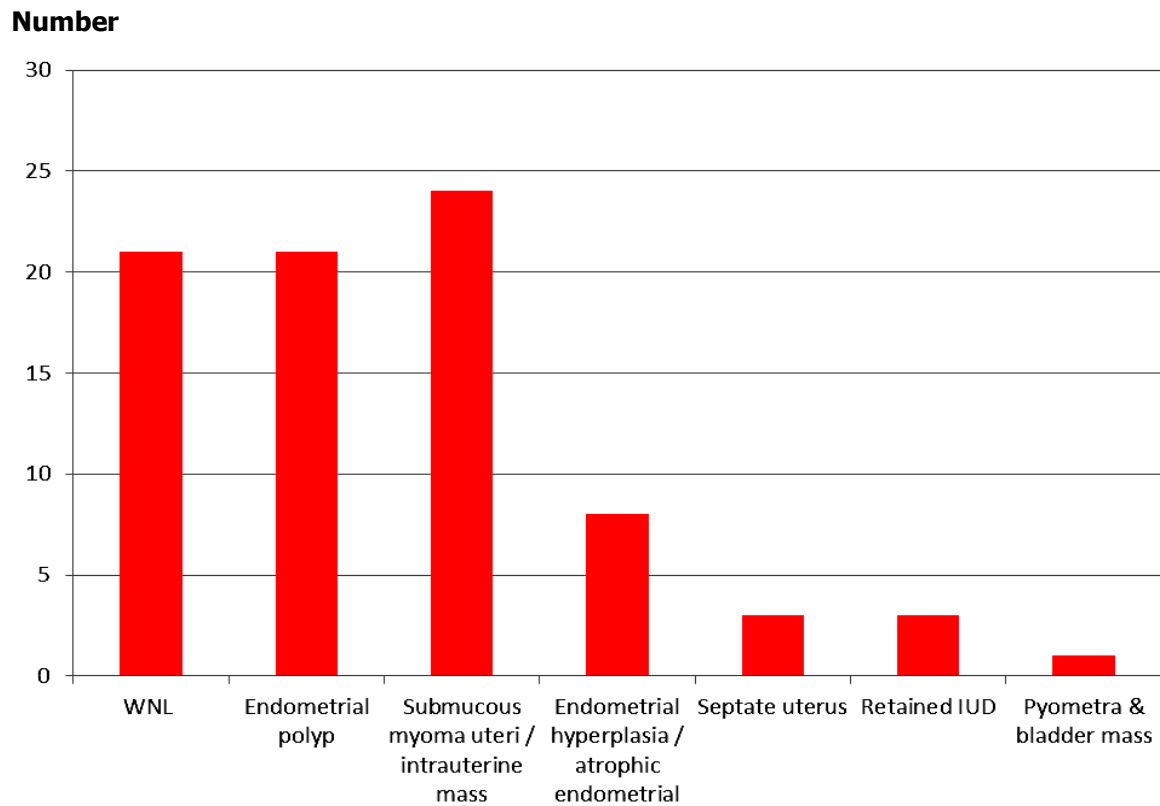
<b>Diagnosis / Finding ; Treatment</b>	<b>Number</b>	<b>Percent</b>
WNL in patient with history of : Infertility	21	35.6
Infertility with AUB	2	3.4
Endometrial polyp ; resection +/- curettage	10	16.9
Uterine didelphys	3	5.1
Intrauterine lesion ; lysis adhesion	13	22.0
Cervical stenosis ; cervical dilation	7	11.9
Cervical canal adhesion ; resection	2	3.4
Infertility with bilateral cornual obstruction; cornualization	1	1.7
<b>Total</b>	<b>59</b>	<b>100</b>



**Figure XI.** Hysteroscopic findings in gynecologic patients

**IV. Hysteroscopic findings & procedures in infertile patients**

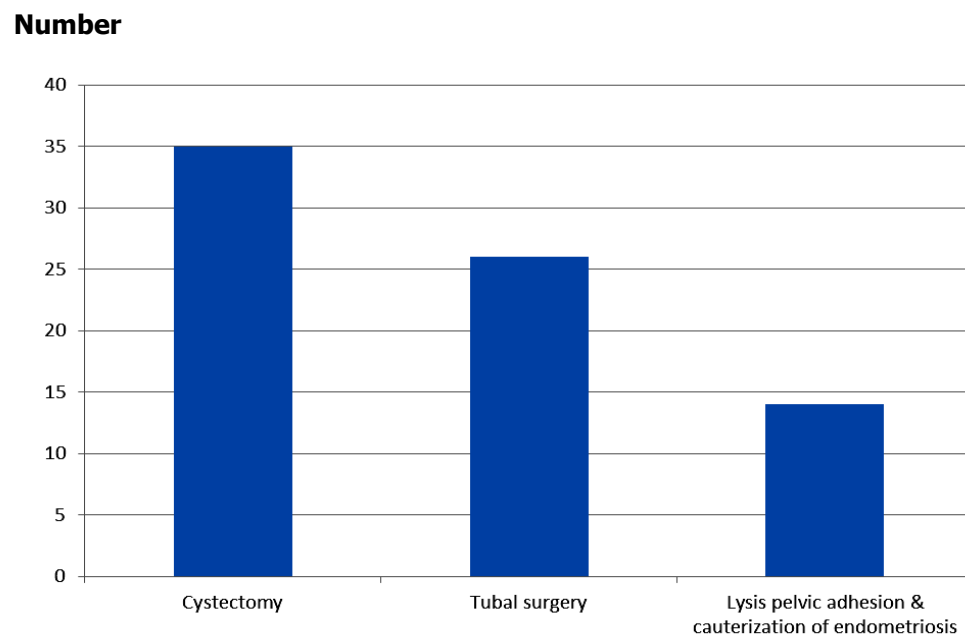
<b>Diagnosis / Finding ; Treatment</b>	<b>Number</b>	<b>Percent</b>
WNL in patient with history of :		
Recurrent pregnancy loss	14	17.3
AUB	4	4.9
Recurrent implantation failure	<b>1</b>	1.2
Secondary amenorrhea	2	2.5
AUB with endometrial polyp ; resection +/- curettage	21	25.9
Submucous myoma uteri ; resection of myoma +/- curettage	22	27.2
Endometrial hyperplasia ; curettage	7	8.6
Intrauterine mass/lesion ; resection, curettage	2	2.5
Septate uterus ; resection	3	3.7
AUB: Atrophic endometrial ; curettage	1	1.2
Retained IUD in endometrium ; IUD removal	3	3.7
Pyometra & bladder mass ; cervical dilation with 4-wings retained & cystoscopy to bx bladder mass	1	1.2
<b>Total</b>	<b>81</b>	<b>100</b>



**Figure XII.** Hysteroscopic findings in infertile patients

#### IV. Laparoscopic surgery procedures in infertile patients

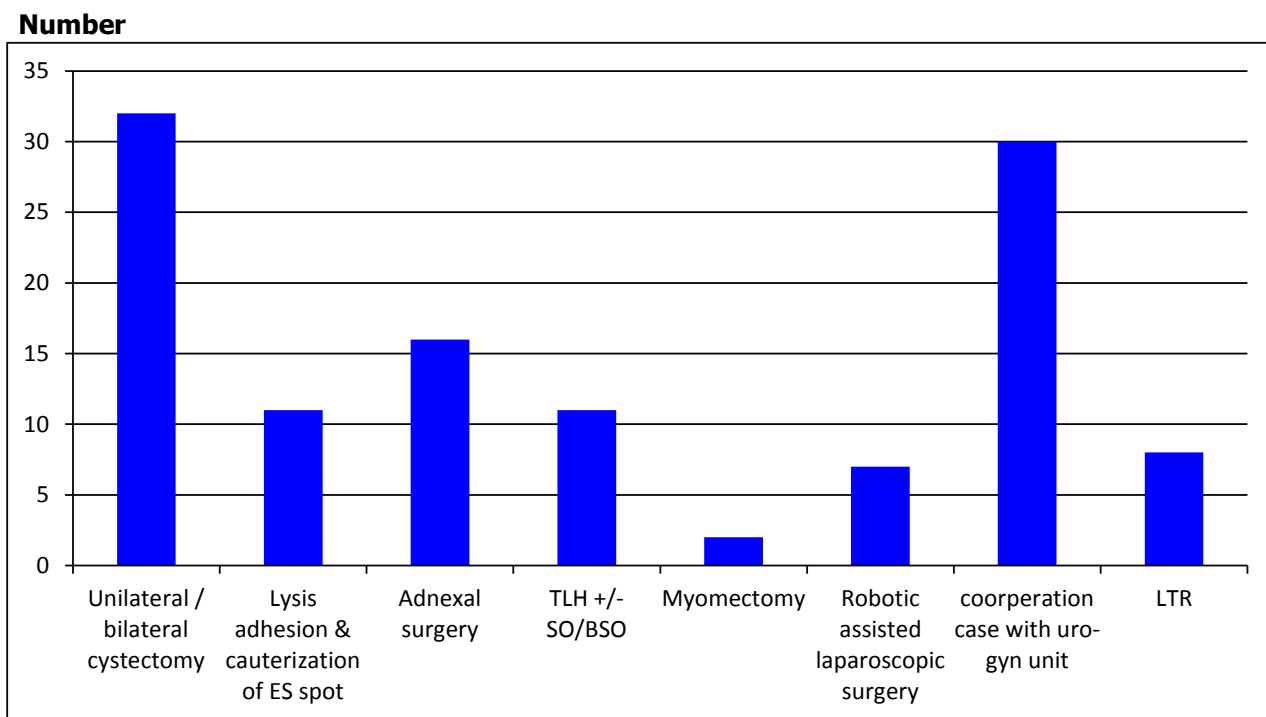
Procedure	Diagnosis / finding	Number	Percent
Cystectomy & dye test	Ovarian cyst / endometrioma	35	46.7
Fimbrioplasty & lysis adhesion	Tubal obstruction & pelvic adhesion	20	26.7
Salpingectomy & lysis adhesion	Hydrosalpinx & pelvic adhesion	4	5.3
Salpingo-oophorectomy & salpingectomy & lysis adhesion	Hydrosalpinx & pelvic adhesion	1	1.3
Bilateral fimbrioplasty & dye test & cystectomy	Bilateral tubal occlusion & ovarian cyst	1	1.3
Lysis pelvic adhesion & cauterization of endometiotic spot & dye test	Pelvic adhesion & endometriosis	14	18.7
<b>Total</b>		<b>75</b>	<b>100</b>



**Figure XIII.** Laparoscopic surgery procedures in infertile patients

## V. Laparoscopic surgery procedures in gynecologic patients

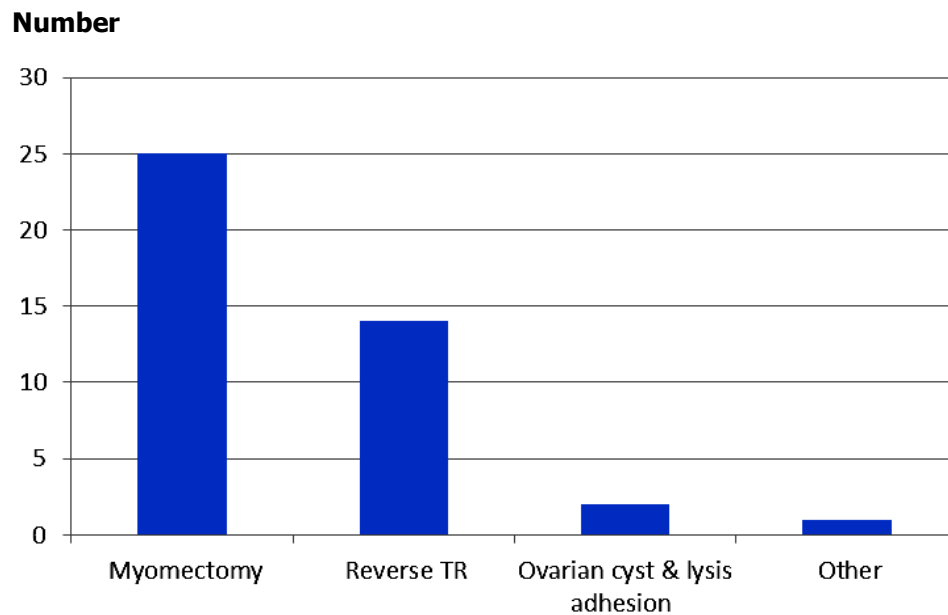
Procedure	Diagnosis / finding	Number	Percent
Unilateral / bilateral Cystectomy	Endometrioma / dermoid cyst	32	27.4
Lysis adhesion & cauterization of endometriotic spot	Chronic pelvic pain with pelvic adhesion & endometriosis	11	9.4
Unilateral / bilateral salpingo-oophorectomy	Endometrioma / ovarian cyst	7	6.0
Salpingectomy	Tubal pregnancy	3	2.6
Salpingostomy	Tubal pregnancy	4	3.4
Salpingostomy & fimbrioplasty	Tubal pregnancy	2	1.7
TLH & Unilateral / bilateral salpingo-oophorectomy	Submucous myoma uteri & endometrioma	4	3.4
TLH	Chronic pelvic pain with AUB	1	0.9
	Dermoid cyst	2	1.7
	Myoma uteri	3	2.6
	Mental retardation	1	0.9
Myomectomy	Subserous myoma uteri	2	1.7
Uro-gynecology & pelvic reconstruction surgery (Cooperation with Uro-Gyn unit)	Uro-gynecologic problem	7	6.0
Robotic assisted laparoscopic surgery (Cooperation with Uro-Gyn unit)	Uro-gynecologic and oncologic case	7	6.0
Single port incision laparoscopic hysterectomy (Cooperation with Uro-Gyn unit: research cases)	Myoma uteri	8	6.8
TLH +/- BSO (Cooperation with Uro-Gyn unit: research cases)	Myoma uteri	11	9.4
LH +/- BSO (Cooperation with Uro-Gyn unit: research cases)	Myoma uteri	4	3.4
LTR	Multiparity	8	6.8
<b>Total</b>		<b>117</b>	<b>100</b>



**Figure XIV.** laparoscopic surgery procedures in gynecologic patients

## VI. Explore laparotomy procedures in infertile patients

Procedure	Diagnosis / finding	Number
Myomectomy	Myoma uteri	25
Reversal tubal sterilization	S/P Tubal resection	14
Ovarian cyst & lysis adhesion	Endometrioma	2
Resection of non-communicating rt. horn of bicornuate uterus	Bi-cornuate uterus with non-communicating rt. horn	1
<b>Total</b>		<b>42</b>



**Figure XV.** Explore laparotomy procedures in infertile patients



## VI. Explore laparotomy procedures in gynecologic patients

Procedure	Diagnosis / finding	Number
TAH	Adenomyosis / myoma uteri / Chronic pelvic pain	9
TAH + BSO or SO	Endometrioma	10
Myomectomy	Myoma uteri	4
Surgical sperm recovery	Male infertility; azoospermia	4
Remove conceptive product with fimbrioplasty	Tubal pregnancy	2
Vaginoplasty	Pyocolpos	2
Salpingectomy with wedge resection	Ruptured tubal pregnancy	1
Partial cystectomy of endometriosis at posterior wall of bladder	Endometriosis at posterior wall of bladder	1
Excision of skin endometriosis at abdomen	Endometriosis of skin	1
Excision of vaginal septum	Vaginal septum	1
Pyo-hematocolpos drainage	Uterine didelphis with pyo- hematocolpos	1
Explor lap to biopsy	Adenomyosis with endometrial hyperplasia	1
<b>Total</b>		<b>37</b>

**PART V****GYNECOLOGIC ENDOCRINE PATIENT AND OTHERS**

### Distribution of gynecologic endocrine patients and others

Diagnosis	No. of cases	
	New case (cases)	On going (visits)
Hyperprolactinemia / Macro or Microadenoma of pituitary gland / Prolactinoma / Pituitary adenoma	21	192
PCOs / Chronic anovulation / oligo-ovulation	42	154
Primary amenorrhea	9	9
Secondary amenorrhea	21	55
Hypermenorrhea	9	13
Oligomenorrhea	11	25
Mullerian agenesis	1	5
Recurrent pregnancy loss	21	57
Premature ovarian failure	4	51
Postmenopausal bleeding	6	5
Congenital adrenal hyperplasia	3	7
AIS	-	1
AUB / DUB	21	58
Perimenopause / Surgical menopause	1	12
Gonadal dysgenesis	-	26
<b>Turner's syndrome</b>	1	26
Hypogonadotrophic hypogonadism	-	19
Panhypopituitarism	2	4
Uterine didelphys	-	6
Septate uterus	2	4
Asherman syndrome	2	22
Testicular feminization	-	6
Hirsutism	2	4
Mccune Albright syndrome	-	6
Kallman syndrome	-	8
Imperforated hymen	1	1
Transverse vaginal septum	1	1
Ambiguous genitalia	1	1

Diagnosis	No. of cases	
	New case (cases)	On going (visits)
Bicornuate uterus	1	2
Early puberty	5	12
Metrorrhagia	-	1
Adrenal cortical adenoma	-	3
Ovarian fibroma	-	1
Uterine synechiae	1	1
<b>Total</b>	<b>194</b>	<b>798</b>

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