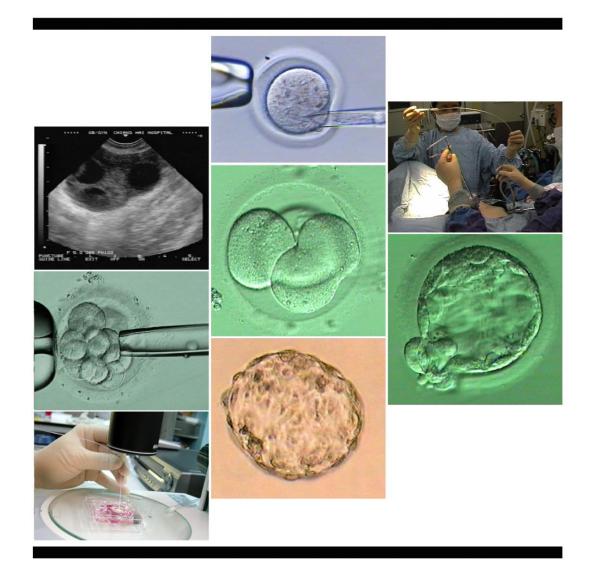
# Annual Report 2016



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

# **ANNUAL REPORT 2016**

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

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# รายงานประจำปี พ.ศ. 2559

หน่วยเวชศาสตร์การเจริญพันธุ์ ภาควิชาสูติศาสตร์และนรีเวชวิทยา คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่

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# **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, Chiang Mai University and Maharaj Nakorn Chiangmai Hospital have grown continuously and become the biggest medical school in Northern Thailand. The department consists of 25 academic staff responsible for teaching and training of 742 medical students, 4 interns, 33 residents and 14 clinical fellows. There is also a growing number of visiting residents, clinical fellows, interns and medical students from others institutes.

This annual report shows data from the Reproductive Medicine Division. This includes patients coming with infertility, endocrine and endometriosis problems. In addition to outpatient 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 and Associate Professor Supreeya Wongtra-ngan is the head of the division.

Wirawit Piyamongkol, M.D., PhD. Head of Department, Associate Professor Department of Obstetrics and Gynaecology Faculty of Medicine, Chiang Mai University Chiang Mai 50200, Thailand

# **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 2016. 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 2016**

- •Infertile patients
- Gynecologic endocrine patients
- Endometriosis patients

## I. Number of infertile patients

Month	Month New case (couples)	
January	22	81
February	29	128
March	18	115
April	19	90
May	26	85
June	32	120
July	21	70
August	38	113
September	41	134
October	13	112
November	25	97
December	26	144
Total	310	1599

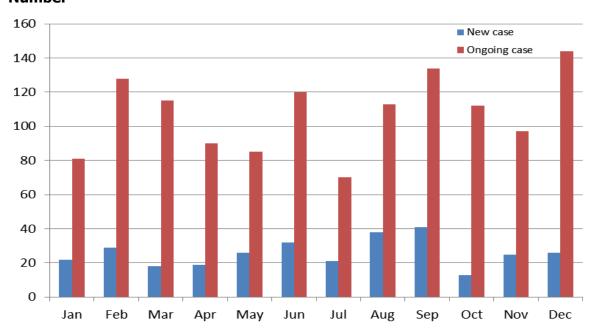
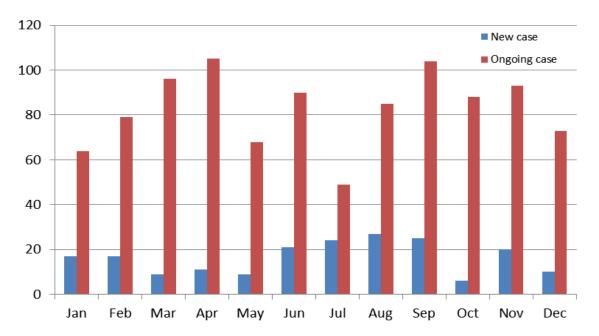


Figure I. Number of Infertile couples per month

# II. Number of gynecologic endocrine patients

Month	New case (cases)	Ongoing case (visits)
January	17	64
February	17	79
March	9	96
April	11	105
May	9	68
June	21	90
July	24	49
August	27	85
September	25	104
October	6	88
November	20	93
December	10	73
Total	196	994



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

#### III. Number of patients with history of endometriosis or pelvic mass

Month	New case (cases)	Ongoing case (visits)
January	16	130
February	35	140
March	18	160
April	14	155
May	23	88
June	27	128
July	29	109
August	42	111
September	19	156
October	13	133
November	20	132
December	15	142
Total	271	1584

#### Number

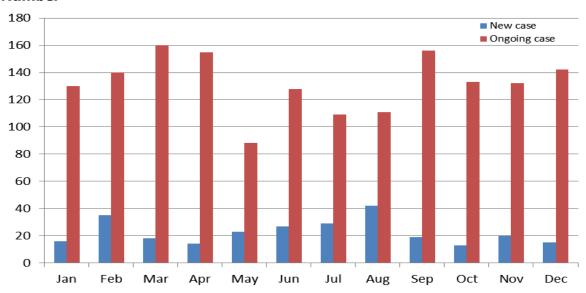


Figure III. Patients with history of endometriosis or pelvic mass

Remark: Number of all year patient distributed by diagnosis

Endom	etriosis	Chronic P	elvic pain		uteri / myosis		moid /st	Endomet	rial polyp
New case	On going case								
141	916	15	89	87	477	12	37	16	65

# BASELINE CHARACTERISTICS AND DIAGNOSIS OF NEW & ON-GOING INFERTILE CASES IN 2016

## I. Age, duration of marriage & infertility

		Mean <u>+</u> SD	Range
٨٥٥	Female (years)	32.5 <u>+</u> 4.7	20 - 48
Age	Male (years)	34.3 <u>+</u> 6.4	21 - 60
Duration of marriage (months)		61.4 <u>+</u> 42.5	6 - 240
Duration of infertility (months)		48.5 <u>+</u> 39.3	6 - 240

#### II. Infertility status

Status	Female (cases)	Male (cases)
Primary infertility	223 (71.9%)	213 (75.8%)
Secondary infertility	87 (28.1%)	68 (24.2%)
Total	310	281



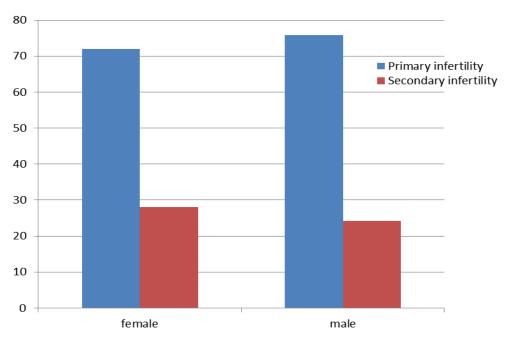


Figure IV. Infertility status

## III. Diagnosis of male partners

Diagnosis	Number	Percent
No demonstrable cause	219	70.6
Oligozoospermia	43	13.9
Azoospermia	13	4.2
Oligo-asthenozoospermia	19	6.
Asthenozoospermia	12	3.9
anti HIV positive	2	0.6
S/P vasectomy	1	0.3
Systemic cause	1	0.3
Total	310	100

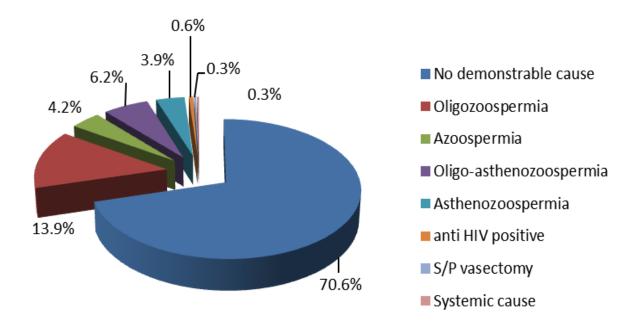


Figure V. Diagnosis of male partners

# IV. <u>Diagnosis of female partners</u>

Diagnosis	Number	Percent
No demonstrable cause	115	39.5
Endometriosis	45	15.5
Pelvic adhesion	8	2.7
Bilateral tubal occlusion	14	4.8
Unilateral tubal occlusion	16	5.5
Post TR	22	7.6
PCO	25	8.6
Irregular menorrhea + ovulation	10	3.4
Hyperprolactinemia	1	0.3
Chronic anovulation	5	1.7
post SO	1	0.3
poor responder	5	1.7
Myoma Uteri	10	3.4
Intrauterine adhesion	2	0.7
bicornuated / septate uterus	1	0.3
Adenomyosis	1	0.3
Habitual abortion	6	2.1
Systemic causes	2	0.7
HIV serodiscordant	2	0.7
Total*	291	100

<sup>\*</sup> Total number of female partners who had completed investigation

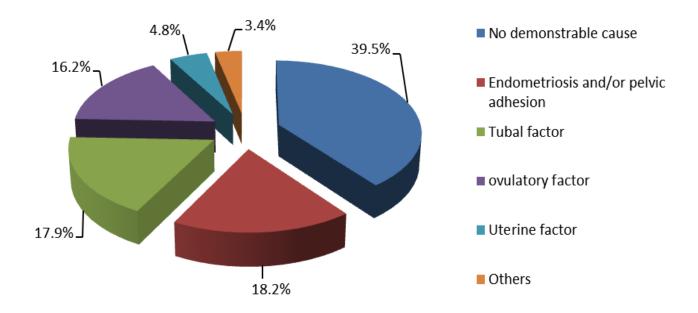


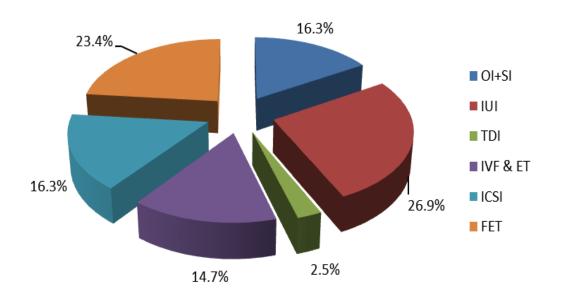
Figure VI. Diagnosis of female partners

# PART III

**TREATMENT OF INFERTILE COUPLES IN 2016** 

# I. <u>Distribution of overall treatments of infertility</u>

Treatment	Number (cycles)	Percent
Ovulation induction and timing sexual intercourse (OI+SI)	52	16.3
Intrauterine insemination (IUI)	86	26.9
Therapeutic insemination using frozen donor spermatozoa (TDI)	8	2.5
In vitro fertilization and embryo transfer (IVF & ET)	47	14.7
Intracytoplasmic sperm injection ( ICSI)	52	16.3
In vitro maturation (IVM)	-	-
Frozen-thawed embryos transfer (FET)	75	23.4
Total cycles of treatment	320	100



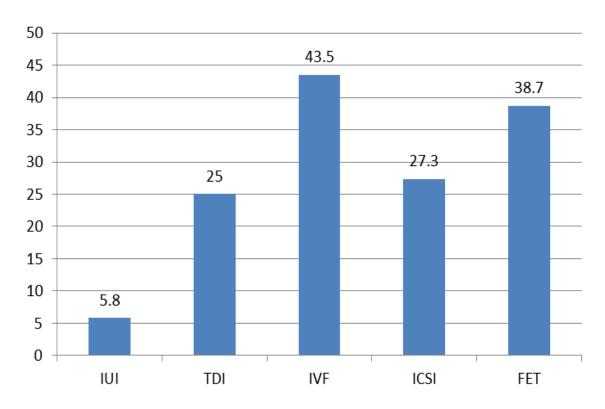
**Figure VII.** Percent of infertility treatments

# II. Number of intrauterine insemination & A.R.T cycles per month and total clinical pregnancy rate

Month	IUI	TDI	IVF	IVM	ICSI	FET
January	5	-	3	-	2	7
February	8	2	1	-	3	4
March	6	2	2	-	5	7
April	7	-	1	-	2	4
May	7	-	13	-	11	5
June	8	-	5	-	4	6
July	11	1	5	-	4	7
August	6	-	2	-	2	7
September	2	-	5	-	7	12
October	7	1	1	-	8	5
November	14	2	9	-	2	7
December	5	-	0	1	2	4
Total	86	8	47	ı	52	75
Embryo transfer			23	-	22	75
Failed fertilization			-	-	-	
Chemical pregnancy			1		-	-
Clinical pregnancy	5	2	10	-	6	<b>29</b> <sup>a</sup>
Abortion	1	-	2	-	-	4
<b>Ectopic pregnancy</b>			1	-	1	-
Twin pregnancy			-	-	-	5
Triplet pregnancy			-	-	-	1
Clinical pregnancy rate (percent)	<b>5.8</b> b	<b>25</b> b	<b>43.5</b> <sup>c</sup>	-	<b>27.3</b> <sup>c</sup>	<b>38.7</b> <sup>c</sup>

Remark: <sup>a</sup> one case was twin pregnancy (DCDA) with single fetal demised <sup>b</sup> pregnancy rate per cycle <sup>c</sup> pregnancy rate per transferred cycle

#### Percent per cycle



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

# PART IV

# ASISSTED REPRODUCTIVE TECHNOLOGY LABORATORY REPORT

# I. In vitro fertilization (IVF) cycle

IVF cycle	mean <u>+</u> SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	34.9 <u>+</u> 3.2	25 – 40	47 cycles
Number of oocyte retrieved	14.5 <u>+</u> 9.1	2 – 42	669 oocytes
Number of normal fertilization	8.8 <u>+</u> 6.2	1 – 28	405 embryos
Normal fertilization rate			60.5 %
Number of cleavage stage embryo	8.4 <u>+</u> 6.2	1 – 27	378 embryos
Cleavage rate			93.3 %
Number of embryo transfer	2.1 <u>+</u> 0.7 (Mode: 2)	1 – 3	42 embryos (23 cycles)
Number of embryo freezing	5.9 <u>+</u> 5.9	1 – 23	213 embryos

# II. Intracytoplasmic sperm injection (ICSI) cycle

ICSI cycle	mean <u>+</u> SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	34.9 <u>+</u> 3.9	25 – 42	52 cycles
Number of oocyte retrieved	14.8 <u>+</u> 11.5	2 - 55	755 oocytes
Number of M II oocytes retrieved	12.0 <u>+</u> 9.9	2 - 45	590 oocytes
Number of normal fertilized embryos	7.9 <u>+</u> 6.9	1 – 34	396 embryos
Fertilization rate			67.1 %
Number of cleavage stage embryo	7.7 <u>+</u> 6.9	1 - 34	383 embryos
Cleavage rate			96.7 %
Number of embryo transfer	2.3 <u>+</u> 0.6 (mode : 2)	1 - 3	49 embryos (22 cycles)
Number of embryo freezing	6.8 + 6.6	1 - 30	265 embryos

# III. Frozen thawed embryo (FET) transfer

Frozen-thawed Embryo transfer cycle (FET)	mean <u>+</u> SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.6 <u>+</u> 3.4	29 – 45	75 cycles
Number of embryo thawing	3.9 <u>+</u> 1.6	1 – 8	203 embryos
Number of embryo transfer	2.1 <u>+</u> 0.6	1 – 4 (Mode = 2)	107 embryos
Survival rate of thawed embryos			52.7 %

#### 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	Chemical Pregnancy	Clinical Pregnancy
<34	15	10	-	6
<u>&gt;</u> 34-39	29	12	1	4
≥40	3	1	-	-
total	47	23	1	10

## Fresh embryos transfer cycle (ICSI cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy
<34	21	9	-	4
<u>&gt;</u> 34-39	26	12	-	2
≥40	5	1	-	-
total	52	22	-	6

## Frozen embryos transfer cycle

Age (years)	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy	abortion
<34	22	-	12	1
<u>&gt;</u> 34-39	45	-	14	3
≥40	8	-	3	-
total	75	-	29	4

# PART V

# ENDOSCOPIC PROCEDURES & OTHER SURGERIES

#### I. Number of one day laparoscopic surgery and findings in infertile patients

Procedure ; Finding	Number
Laparoscopic examination with dye test;	
Normal finding with patent of both tubes	10
patent of one tube	2
bilateral tubal obstruction	1
Laparocopic cauterization of endometriotic spot and/or lysis adhesion and dye test;	
patent of both tubes	9
patent of one tube	-
bilateral tubal obstruction	2
Total	24

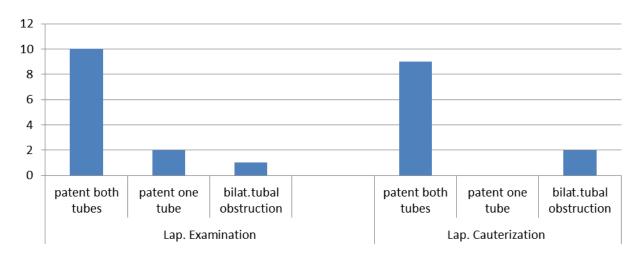


Figure IX. Number of one day laparoscopic surgery in infertile patients

# II. Number of one day laparoscopic surgery and findings in gynecologic patient

Procedure ; Finding	Number
Laparoscopic examination; Normal finding	-
Laparoscopic cauterization; Endometriosis	6
Laparoscopic lysis adhesion; Pelvic adhesion	3
Laparoscopic tubal resection	8
Total	17

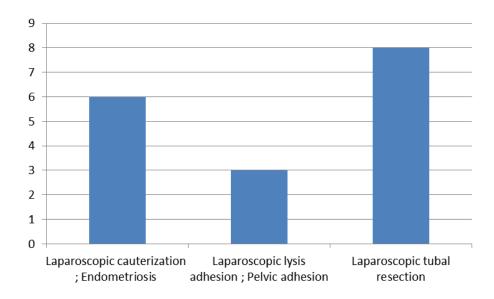


Figure X. Number of Laparoscopic surgery and findings in gynecologic patient

#### **IIII.** Number of hysteroscopic procedures in infertile patients

Hysteroscopic procedure (; finding)	Number	Percent
Hysteroscopic examination ;		
WNL in patient with history of infertility only	15	20.8
WNL in patient had history of habitual abortion &	4	5.6
Infertility		
WNL in patient with history of recurrent implantation	4	5.6
failure		
Hysteroscopic resection of endometrial polyp (+/- Curettage)	31	43
Hysteroscopic resection of submucous myoma (+/- Curettage)	13	18
Hysteroscopic resection of intrauterine septum / adhesion	3	4.2
Cervical dilation of cervical stenosis	2	2.8
Total	72	100

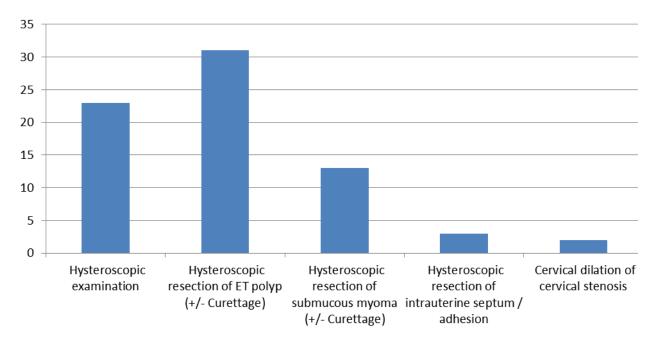


Figure XI. Number of hysteroscopic procedures in gynecologic patients

# IV. Number of hysteroscopic /vaginoscopic procedures in gynecologic patients

Hysteroscopic procedure (; finding)	Number	Percent
Hysteroscopic examination in patient with history of Recurrent pregnancy loss (; Normal finding) AUB Hematocolpos Secondary amenorrhea (; Normal finding) S/P myomectomy	6 5 1 1	11.8 9.8 1.9 1.9
Hysteroscopic resection of intrauterine adhesion in patient with history of recurrent pregnancy loss	5	9.8
Hysteroscopic resection of endometrial polyp	12	23.6
Hysteroscopic resection of submucous myoma uteri / intrauterine mass	12	23.6
Hysteroscopic curettage in post-menopausal bleeding	2	3.9
Hysteroscopy for IUD removal	1	1.9
Hysteroscopic examination in labial fusion case	1	1.9
Vaginoscopic examination ; S/P vaginoplasty	4	7.9
Total	51	100

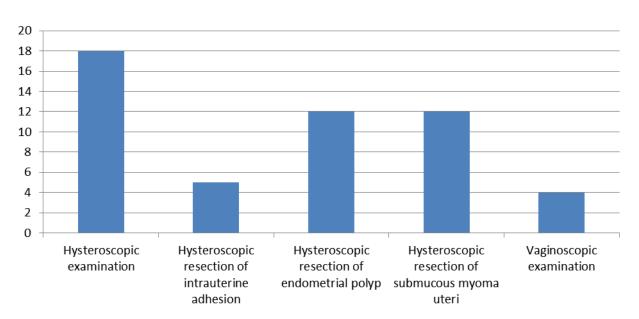


Figure XII. Hysteroscopic/vaginoscopic procedures in infertile patients

# V. Number of laparoscopic procedures in infertile patients

Procedure	Diagnosis / finding	Number	Percent
Cystectomy & dye test	Ovarian cyst / endometrioma	28	38.4
Cystectomy & myomectomy	Ovarian cyst with myoma uteri	1	1.4
Cystectomy & lysis adhesion with dye test	Ovarian cyst / endometrioma with pelvic adhesion	18	24.7
Cystectomy & salpingectomy or fimbryoplasty with dye test	Ovarian cyst / endometrioma with hydrosalpinx	3	4.1
Lysis adhesion & Salpingectomy	Pelvic adhesion & hydrosalpinx	6	8.2
Lysis pelvic adhesion & cauterization of endometiotic spot & dye test	Pelvic adhesion & endometriosis	7	9.6
Fimbrioplasty with lysis adhesion and dye test	Hydrosalpinx	4	5.5
Salpingectomy	Hydrosalpinx	3	4.1
Salpingo-oophorectomy with dye test	Dermoid cyst / endometrium / TOA	2	2.7
Myomectomy with salpingectomy	Submucous myoma uteri with hydrosalpinx	1	1.4
Total		73	100

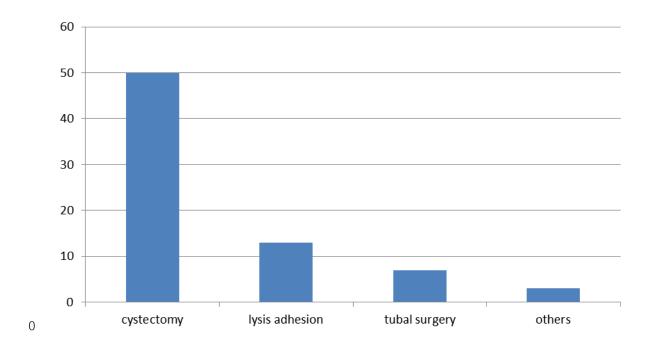
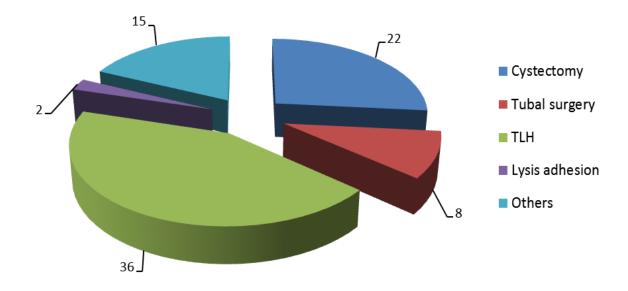


Figure XIII. Number of laparoscopic procedures in infertile patients

# V. Number of laparoscopic procedures in gynecologic patients

Procedure	Diagnosis / finding	Number	Percent
Unilateral / bilateral Cystectomy with or without lysis adhesion	Endometrioma / dermoid cyst	21	25.3
Corpus luteum cystectomy	Ruptured corpus luteum cyst	1	1.2
Salpingectomy	Tubal pregnancy	4	4.9
Salpingectomy	Chronic salpingitis	1	1.2
Salpingostomy	Tubal pregnancy	3	3.6
TLH & Unilateral / bilateral salpingo-oophorectomy	Ovarian cyst / Myoma uteri / Endometrium hyperplasia	17	20.5
TLH	Dermoid cyst / Myoma Uteri / Mental retardation	7	8.4
TLH & Bilateral salpingectomy	Myoma uteri / Hypermenorrhea	2	2.4
LAVH & lap. lysis adhesion	Myoma uteri & pelvic adhesion	1	1.2
TLH +/- BSO (Coorperation with Uro-Gyn unit)	Myoma uteri	8	9.6
Single port incision laparoscopic hysterectomy (Coorperation with Uro-Gyn unit)	Adenomyosis / Dermoid cyst / Mental retardation	1	1.2
Lysis adhesion	Severe pelvic adhesion	2	2.4
Uro-gynecology & pelvic reconstruction surgery (Coorperation with Uro-Gyn unit)	Uro-gynecologic problem	15	18.1
Total		83	100



**Figure XIV.** Number of laparoscopic procedures in infertile patients

#### VI. Number of explore laparotomy procedures and other surgery in infertile patients

Procedure	Diagnosis / finding	Number
Myomectomy and dye test	Myoma uteri	14
Myomectomy and cystectomy and dye test	Myoma uteri with ovarian cyst	3
Myomectomy and lysis adhesion	Myoma uterin and pelvic adhesion	1
Reversal tubal sterilization	S/P Tubal resection	6
Bilateral ovarian cystectomy and lysis adhesion and dye test	Bilateral ovarian cyst and pelvic adhesion	1
Salpingectomy and lysis adhesion	Severe adhesion and bilateral hydrosalpinx	1
Total		26

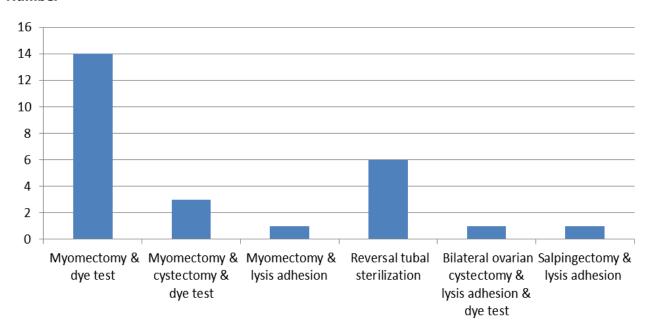


Figure XV. Number of explore laparotomy procedures in infertile patients

#### VI. Number of explore laparotomy procedures in gynecologic patients

Procedure	Diagnosis / finding	Number
TAH	Myoma uteri / Hypermenorrhea	2
TAH	Mental retardation	2
TAH + BSO or SO	Myoma uteri / Adenomyosis	5
	Ovarian tumor	1
	Complex atypical hyperplasia	1
Myomectomy	Myoma uteri	11
Myomectomy & cystectomy	Myoma uteri & ovarian cyst	1
Vaginoplasty	Transverse vaginal septum	3
Bilateral partial salpingectomy	AUB with severe adhesion	1
Salpingo-oophorectomy	Huge ovarian cyst	1
Labialplasty	Labial fusion	1
Total		29

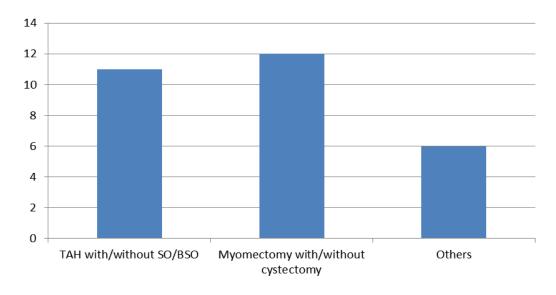


Figure XVI. Number of explore laparotomy procedures in gynecologic patients

# PART V

**GYNECOLOGIC ENDOCRINE PATIENT AND OTHERS** 

# Distribution of gynecologic endocrine patients and others

	No. of cases	
Diagnosis	New case (cases)	On going (visits)
Hyperprolactinemia / Macro or Microadenoma of pituitary gland / Prolactinoma / Pituitary adenoma	7	65
PCOS	47	234
Anovulation / irregular menstruation	15	55
Primary amenorrhea	7	37
Secondary amenorrhea	22	90
oligomenorrhea	-	2
Mullerian agenesis	-	3
Recurrent pregnancy loss	29	55
Premature ovarian failure	6	57
Congenital adrenal hyperplasia	1	15
AUB / Hypermenorrhea	20	86
Perimenopause / Surgical menopause	13	87
Gonadal dysgenesis	1	15
Turner's syndrome	3	45
Pituitary disorder	4	77
Mental retardation	3	10
Uterine didelphys / Septate uterus	9	11
Precocious puberty	1	5
Asherman syndrome	2	10
Mccune Albright syndrome	-	4
Klidfelter syndrome	1	2
Labial fusion	3	9
Vaginal stenosis	-	2
Pituitary hypoplasia	2	18
Total	196	994