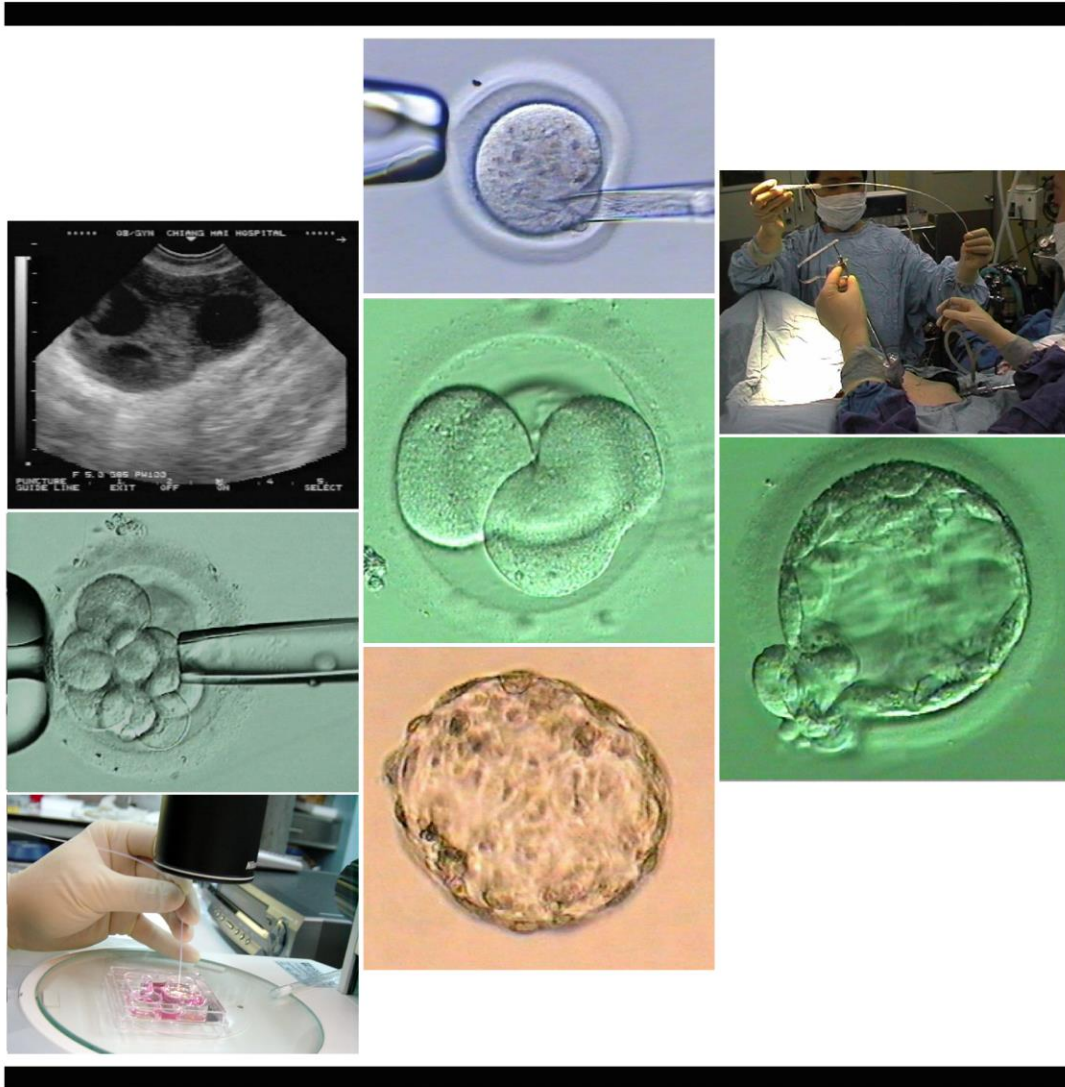


Annual Report

2017



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

ANNUAL REPORT 2017

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

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Fellowships	Duangrudee Peetinarak MD. Talerngsak Netsirininkul MD. Natpat Jansaka MD. Waranya Rueangchainikhom MD.
Research nurse:	Rung-aroon Sreshthaputra MSc.
OPD nurses:	Kullaya Sangchun BSc. Sayamon Cotchapanya MNS. Nuchanart Suntornlimsiri BSc.
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Data collection and reporting	Rung-aroon Sreshthaputra MSc.

รายงานประจำปี พ.ศ. 2560

หน่วยเวชศาสตร์การเจริญพันธุ์
ภาควิชาสูติศาสตร์และนรีเวชวิทยา
คณะแพทยศาสตร์
มหาวิทยาลัยเชียงใหม่

หัวหน้าหน่วย

อาจารย์ประจำหน่วย

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อุสรุสา เสาวรส

ปาริยา สมศักดิ์

รวบรวมข้อมูลและจัดทำรายงาน

รุ่งอรุณ เศรษฐบุตร

Preface

One major field of our Department of Obstetrics and Gynecology is the reproductive medicine (RM) division that serves the major of patients who have problem of infertility, endometriosis, the gynecologic endocrine patients and also the patients who need laparoscopy and hysteroscopy procedure. RM Division is very famous in academic career that many elective fellows from other institutes visited this unit frequently.

This annual report 2017 was summarized their hard-working in last year. It divided into 6 parts as the following; the number of attended patients, the baseline characteristics and diagnosis of infertile couples, the treatment of infertile couples, the assisted reproductive technology laboratory report, the endoscopic procedures and the distribution of gynecologic endocrine patients. RM unit also has the facility to provide assisted conception service to cope with the increasing demand.

At this moment, Associate Professor Opas Sreshthaputra is the new leader of the team since October 2017, I do believe that he will navigate the unit to achieve the goal of our department and our faculty in the near future.

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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 infertility treatment, reproductive surgery that were provided in the year 2017. I would like to thank all team members for their kind contribution and dedication for taking care of our patients.

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 2017**

- Infertile patients
- Gynecologic endocrine patients
- Endometriosis patients

I. Number of infertile patients

Month	New case (couples)	Ongoing case (couple visits)
January	18	127
February	19	113
March	28	146
April	39	74
May	40	139
June	36	154
July	31	164
August	23	167
September	35	140
October	32	168
November	11	148
December	10	76
Total	322	1616

Number

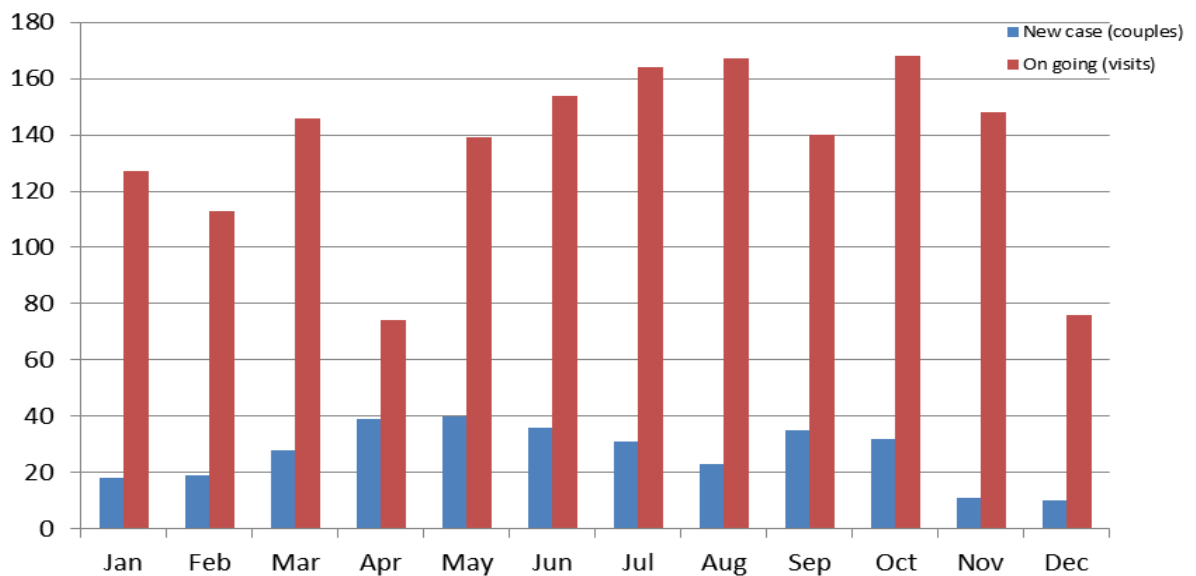


Figure I. Number of Infertile couples per month

II. Number of gynecologic endocrine patients

Month	New case (cases)	Ongoing case (visits)
January	20	65
February	19	80
March	23	84
April	10	43
May	17	85
June	21	80
July	12	79
August	14	83
September	13	72
October	12	95
November	16	73
December	19	63
Total	196	902

Number

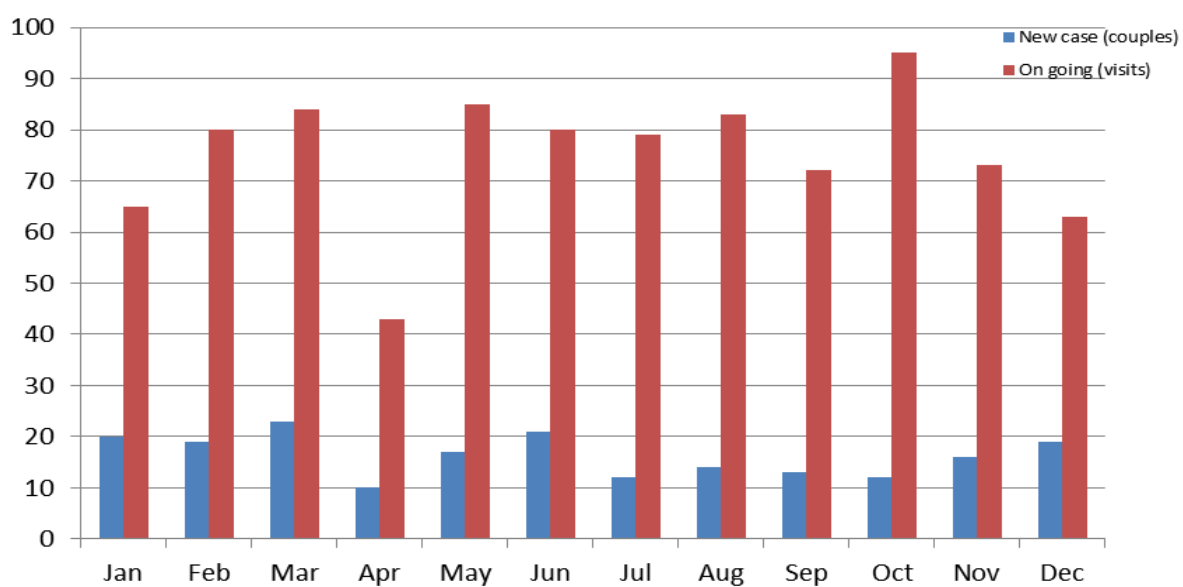


Figure II. Number of endocrine patients per month

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

Month	New case (cases)	Ongoing case (visits)
January	11	149
February	15	127
March	18	152
April	10	69
May	25	135
June	29	175
July	17	142
August	28	154
September	13	169
October	17	147
November	8	124
December	16	113
Total	207	1656

Number

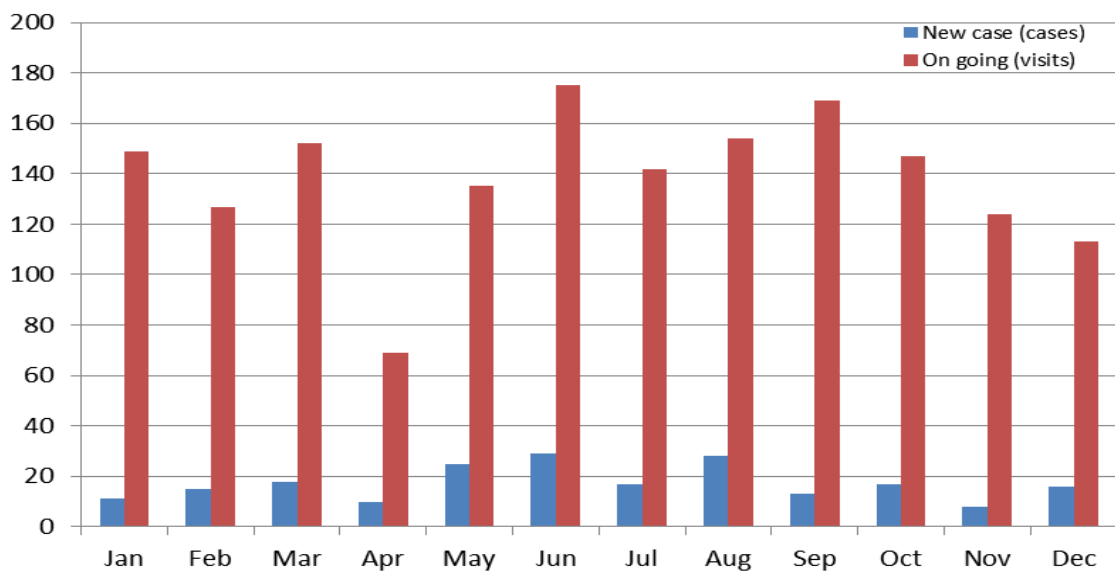


Figure III. Patients with history of endometriosis or pelvic mass

Remark: Number of all year patient distributed by diagnosis

Endometriosis		Chronic Pelvic pain		Myoma Uteri / Adenomyosis		Dermoid Cyst	
New case	On going case	New case	On going case	New case	On going case	New case	On going case
107	770	12	82	84	499	9	37

PART II**BASELINE CHARACTERISTICS AND DIAGNOSIS
OF
NEW & ON-GOING INFERTILE CASES IN 2017**

I. Age, duration of marriage & infertility

		Mean \pm SD	Range
Age	Female (years)	32.9 \pm 4.8	21 - 45
	Male (years)	34.2 \pm 6.1	21 - 60
Duration of marriage (months)		62.2 \pm 39.5	6 - 240
Duration of infertility (months)		48.7 \pm 40.3	6 - 240

II. Infertility status

Status	Female (cases)	Male (cases)
Primary infertility	248 (64.1%)	231 (73.3%)
Secondary infertility	139 (35.9%)	84 (26.7%)
Total	347	315

Percent

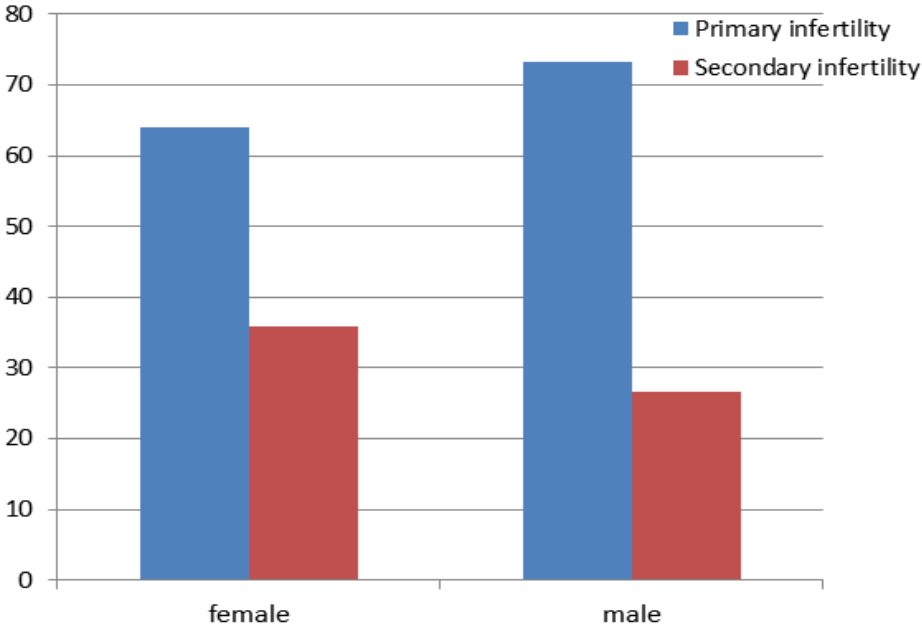


Figure IV. Infertility status

III. Diagnosis of male partners

Diagnosis	Number	Percent
No demonstrable cause	214	68.2
Oligozoospermia	47	15.0
Severe Oligozoospermia	13	4.1
Azoospermia	15	4.8
Oligo-asthenozoospermia	13	4.1
Asthenozoospermia	11	3.5
S/P vasectomy	1	0.3
Total	314	100

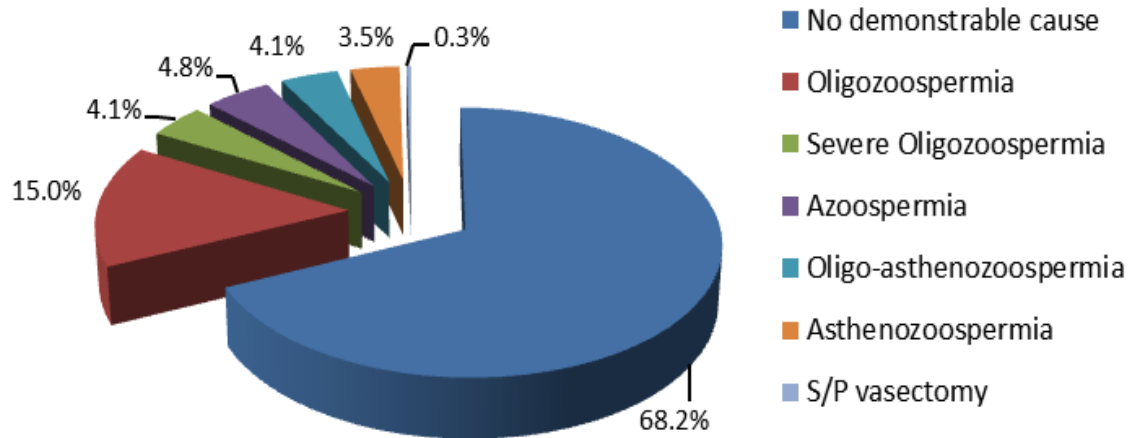


Figure V. Diagnosis of male partners

IV. Diagnosis of female partners

Diagnosis	Number	Percent
No demonstrable cause	114	40.1
Endometriosis	38	14.1
Pelvic adhesion	6	2.9
Bilateral tubal occlusion	13	4.2
Unilateral tubal occlusion	22	7.1
Post TR	14	2.9
PCO	33	10.6
Irregular menorrhoea + ovulation	15	6.7
Hyperprolactinemia	1	0.3
Chronic anovulation	5	2.2
post SO	2	0.6
Myoma Uteri	13	4.2
Intrauterine adhesion	2	0.6
Adenomyosis	3	1.0
Habitual abortion	4	1.3
Systemic causes	3	1.0
HIV serodiscordant	1	0.3
Total*	312	100

** Total number of female partners who had completed investigation*

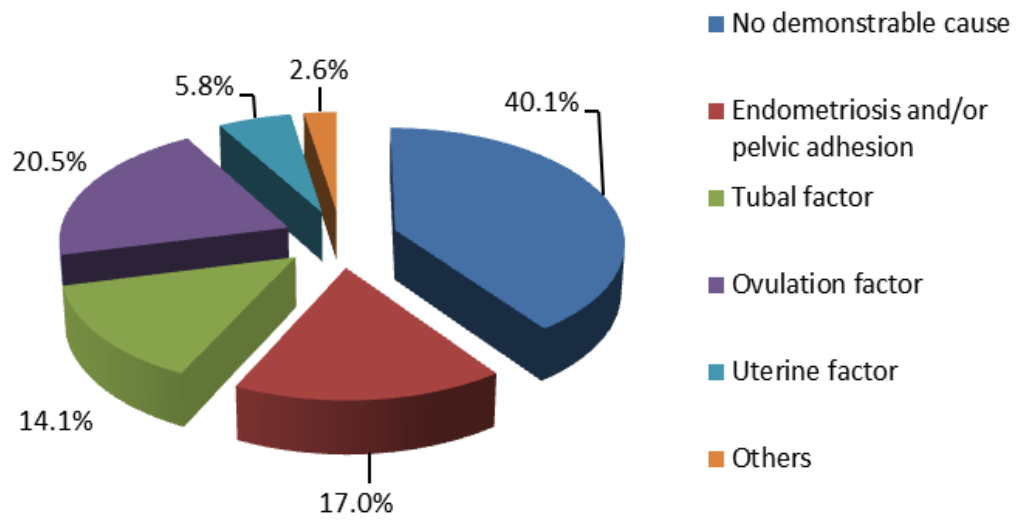


Figure VI. Diagnosis of female partners

PART III**TREATMENT OF INFERTILE COUPLES IN 2017**

I. Distribution of overall treatments of infertility

Treatment	Number (cycles)	Percent
Ovulation induction and timing sexual intercourse (OI+SI)	41	11.0
Intrauterine insemination (IUI)	120	32.1
Therapeutic insemination using frozen donor spermatozoa (TDI)	12	3.2
In vitro fertilization and embryo transfer (IVF & ET)	23	6.1
Intracytoplasmic sperm injection (ICSI)	74	19.8
In vitro maturation (IVM)	-	-
Frozen-thawed embryos transfer (FET) from IVF	41	11.0
Frozen-thawed embryos transfer (FET) from ICSI	63	16.8
Total cycles of treatment	374	100

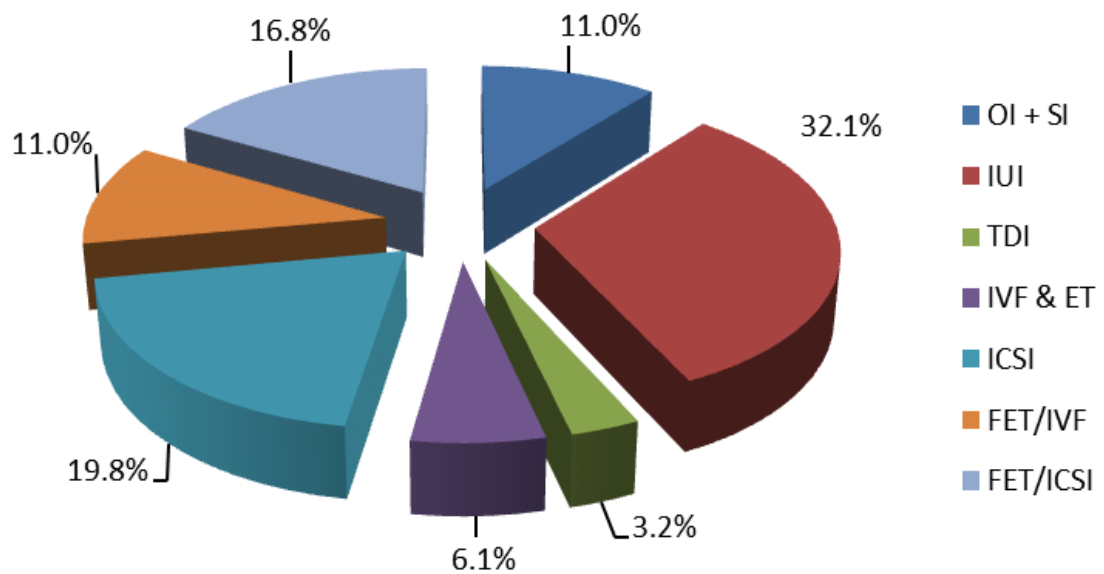


Figure VII. Percent of infertility treatments

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

Month	IUI	TDI	IVF	ICSI	FET/ IVF	FET/ ICSI
January	7	1	4	3	2	2
February	9	-	4	3	6	2
March	16	2	1	7	6	8
April	8	1	-	1	2	2
May	11	-	3	10	2	7
June	7	2	3	11	6	7
July	11	2	2	3	3	6
August	8	1	-	7	5	7
September	7	1	1	9	2	5
October	11	1	2	8	3	6
November	14	1	2	8	3	9
December	11	-	1	4	1	2
Total	120	12	23	74	41	63
Failed fertilization			1	1		
Embryo transfer			5	19	41	63
Chemical pregnancy			-	1	3	2
Clinical pregnancy	6	0	1	3	9	17
Singleton pregnancy	6	-	1	2	6	10
Twin pregnancy	-	-	-	1	3	4
Triplet pregnancy	-	-	-	-	-	-
Abortion	-	-	-	1	3	8
Ectopic pregnancy	-	-	-	-	-	-
Clinical pregnancy rate (percent)	5.0^a	0^a	20.0^b	15.8^b	22.0^b	27.0^b

*Remark: ^a pregnancy rate per cycle
^b pregnancy rate per transferred cycle*

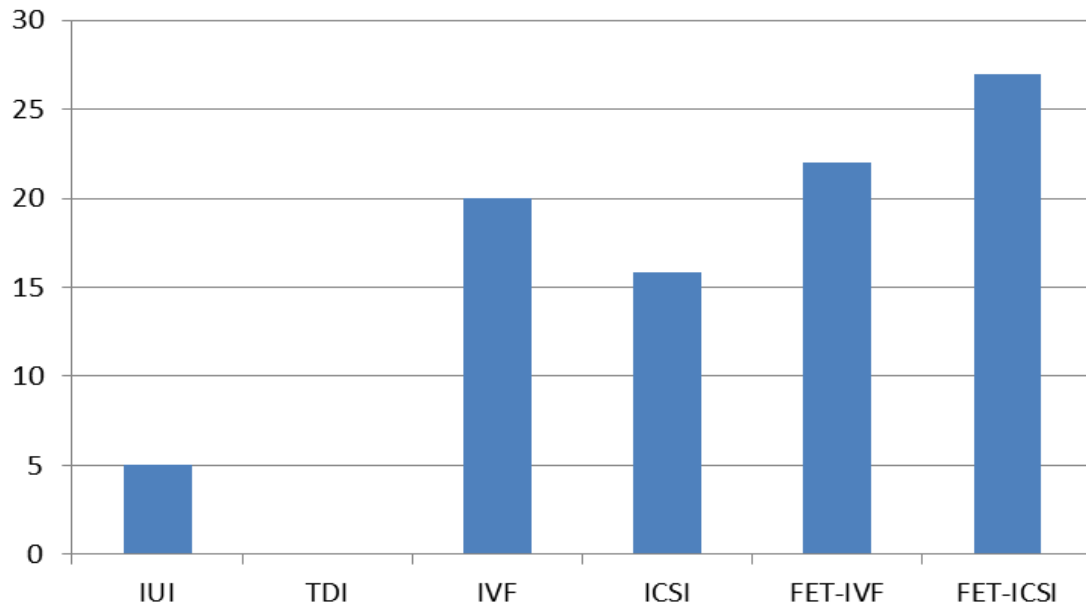
Percent per cycle

Figure VIII. Pregnancy rate of infertility treatments

PART IV

**ASISSTED REPRODUCTIVE TECHNOLOGY
LABORATORY REPORT**

I. In vitro fertilization (IVF) cycle

IVF cycle	mean \pm SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.1 \pm 4.1	27– 44	23 cycles
Number of oocyte retrieved	14.2 \pm 9.6	5 – 42	327 oocytes
Number of normal fertilization	9.5 \pm 6.7	2 – 31	209 embryos
Normal fertilization rate			63.9 %
Number of cleavage stage embryo	9.4 \pm 5.8	2 – 23	197 embryos
Cleavage rate			94.3 %
Number of embryo transfer	2.2 \pm 0.4 (Mode: 2)	2 – 3	45 embryos (19 cycles)
Number of embryo freezing	9.2 \pm 5.3	3 – 21	183 embryos

II. Intracytoplasmic sperm injection (ICSI) cycle

ICSI cycle	mean \pm SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	34.9 \pm 4.0	23 – 43	76 cycles
Number of oocyte retrieved	12.2 \pm 8.0	1 - 33	863 oocytes
Number of M II oocytes retrieved	9.9 \pm 6.8	1 - 28	703 oocytes
Number of normal fertilized embryos	7.2 \pm 5.4	1 – 24	514 embryos
Fertilization rate			73.1 %
Number of cleavage stage embryo	7.0 \pm 5.2	1 -23	487 embryos
Cleavage rate			94.7 %
Number of embryo transfer	2.3 \pm 0.8 (mode : 2)	1 - 4	45 embryos (20 cycles)
Number of embryo freezing	7.1 \pm 5.4	1 - 23	427 embryos

III. Frozen thawed embryo transfer (FET) ; embryos from standard IVF

Frozen-thawed Embryo transfer cycle (FET-IVF)	mean \pm SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.7 \pm 4.3	27 – 44	51 cycles
Number of embryo thawing	3.5 \pm 1.3 (Mode = 4)	1 – 6	142 embryos
Number of embryo survived	2.1 \pm 0.9 (Mode = 2)	1 - 5	90 embryos
Number of embryo transfer	1.9 \pm 0.6 (Mode = 2)	1 – 3	79 embryos
Survival rate of thawed embryos			63..4 %

IV. Frozen thawed embryo transfer (FET); embryos from ICSI

Frozen-thawed Embryo transfer cycle (FET-ICSI)	mean \pm SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.4 \pm 4.0	23 – 46	63 cycles
Number of embryo thawing	4.1 \pm 1.8 (Mode = 3)	2 – 10	258 embryos
Number of embryo survived	2.3 \pm 0.8 (Mode = 2)	1 - 6	135 embryos
Number of embryo transfer	2.1 \pm 0.6 (Mode = 2)	1 – 4	135 embryos
Survival rate of thawed embryos			52.3 %

V. 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	9	1	-	-
≥34-39	13	4	-	1
≥40	1	-	-	-
total	23	5	-	1

Fresh embryos transfer cycle (ICSI cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy
<34	21	4	1	1
≥34-39	43	12	-	2
≥40	10	3	-	-
total	74	19	1	3

Frozen-thawed embryos transfer cycle ; embryos from standard IVF cycle

Age (years)	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy	abortion
<34	13	-	4	2
≥34-39	21	2	3	3
≥40	7	-	2	-
total	41	2	9	5

Frozen-thawed embryos transfer cycle ; embryos from ICSI

Age (years)	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy	abortion
<34	19	1	6	2
≥34-39	34	1	6	3
≥40	10	-	5	1
total	63	2	17	6

PART V**ENDOSCOPIC PROCEDURES
&
OTHER SURGERIES**

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

Procedure ; Finding	Number
Laparoscopic examination with dye test ; Normal finding with patent of both tubes	6
patent of one tube	1
bilateral tubal obstruction	1
Laparoscopic cauterization of endometriotic spot and/or lysis adhesion and dye test ; patent of both tubes	5
patent of one tube	-
bilateral tubal obstruction	-
Total	13

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

Procedure ; Finding	Number
Laparoscopic examination ; Normal finding	2
Laparoscopic cauterization ; Endometriosis	-
Laparoscopic lysis adhesion ; Pelvic adhesion	-
Laparoscopic tubal resection	3
Total	5

IIIIII. Number of hysteroscopic procedures in infertile patient

Hysteroscopic procedure (; finding)	Number	Percent
Hysteroscopic examination ; WNL in patient with history of infertility only	17	24.6
WNL in patient had history of habitual abortion & Infertility	6	8.7
WNL in patient with history of recurrent implantation failure	3	4.3
Unicornuate uterus	1	1.4
Bicornuate uterus	1	1.4
Hysteroscopic resection of endometrial polyp (+/- Curettage)	19	27.5
Hysteroscopic resection of submucous myoma (+/- Curettage)	11	15.9
Hysteroscopic resection of intrauterine septum / adhesion	6	8.7
Cervical dilation of cervical stenosis	5	7.2
Total	69	100

Number

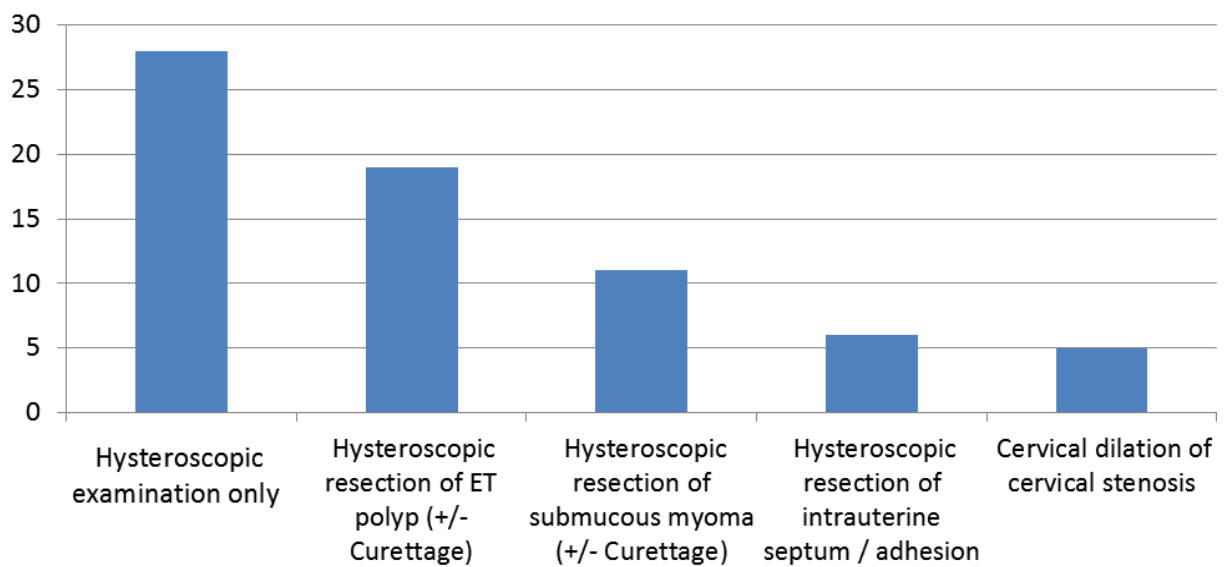


Figure IX. Number of hysteroscopic procedures in infertile patient

IV. Number of hysteroscopic /vaginoscopic procedures in gynecologic patient

Hysteroscopic procedure (; finding)	Number	Percent
Hysteroscopic examination in patient with history of Recurrent pregnancy loss (; Normal finding)	2	4.1
AUB	3	6.1
Hematocolpos	1	2.0
Secondary amenorrhea (; Normal finding)	-	-
S/P myomectomy	-	-
Hysteroscopic resection of intrauterine adhesion in patient with history of recurrent pregnancy loss	7	14.3
Hysteroscopic resection of endometrial polyp	18	36.7
Hysteroscopic resection of submucous myoma uteri / intrauterine mass	12	24.5
Hysteroscopic curettage in post-menopausal bleeding	2	4.1
Hysteroscopy for IUD removal	-	-
Hysteroscopic examination in labial fusion case	-	-
Vaginoscopic examination ; S/P vaginoplasty	4	8.2
Total	49	100

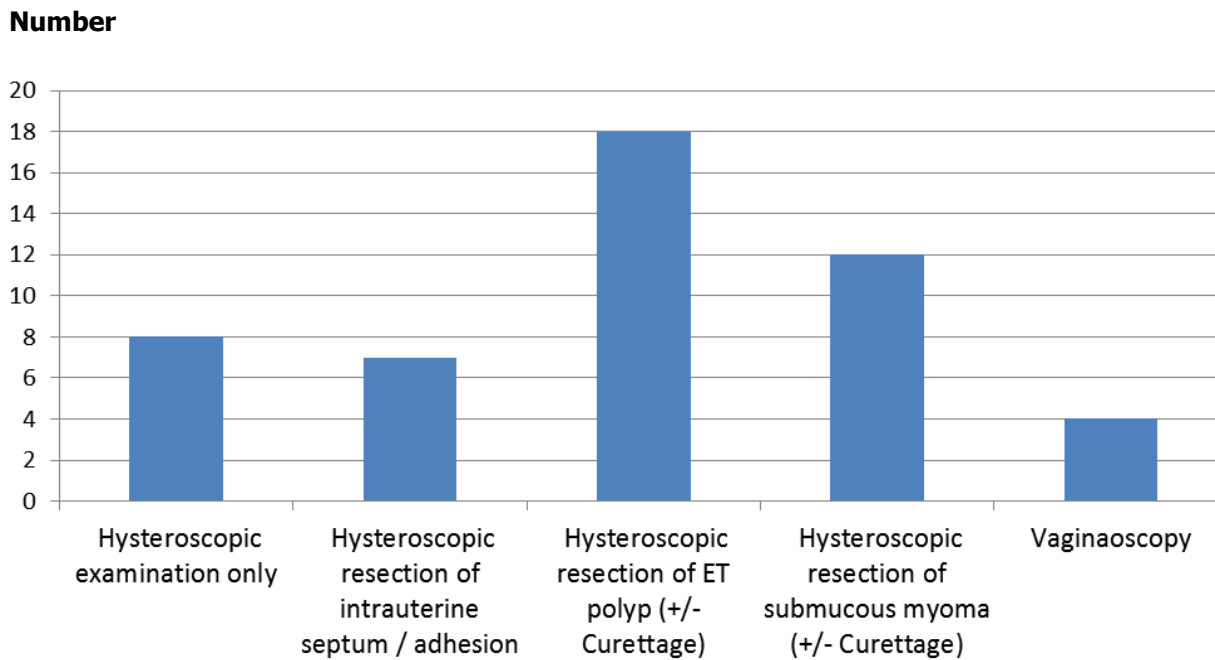


Figure X. Hysteroscopic/vaginoscopic procedures in gynecologic patient

V. Number of laparoscopic procedures in infertile patient

Procedure	Diagnosis / finding	Number	Percent
Cystectomy & dye test	Ovarian cyst / endometrioma	26	40.0
Cystectomy & myomectomy	Ovarian cyst with myoma uteri	4	6.2
Cystectomy & lysis adhesion with dye test	Ovarian cyst / endometrioma with pelvic adhesion	7	10.8
Cystectomy & salpingectomy or fimbrioplasty & dye test	Ovarian cyst / endometrioma with hydrosalpinx	5	7.7
Lysis adhesion & Salpingectomy	Pelvic adhesion & hydrosalpinx	1	1.5
Lysis pelvic adhesion & cauterization of endometiotic spot & dye test	Pelvic adhesion & endometriosis	2	3.1
Reversal tubal sterilization & cystectomy & myomectomy	S/P TR with ovarian cyst & submucous myoma	1	1.5
Reversal tubal sterilization	S/P TR	1	1.5
Salpingectomy	Hydrosalpinx	4	6.2
Fimbrioplasty & lysis adhesion & dye test	Hydrosalpinx / tubal obstruction	6	9.2
Fimbryo-plasty & myomectomy & lysis adhesion & dye test	Chronic PID with tubal obstruction	1	1.5
Oophorectomy	Endometriosis / recurrent CA breast	3	4.6
Open & drain of bilateral proximal tubal occlusion	Bilateral hydrosalpinx	3	4.6
Oophorectomy and dye test	Dermoid cyst	1	1.5
Total		65	100

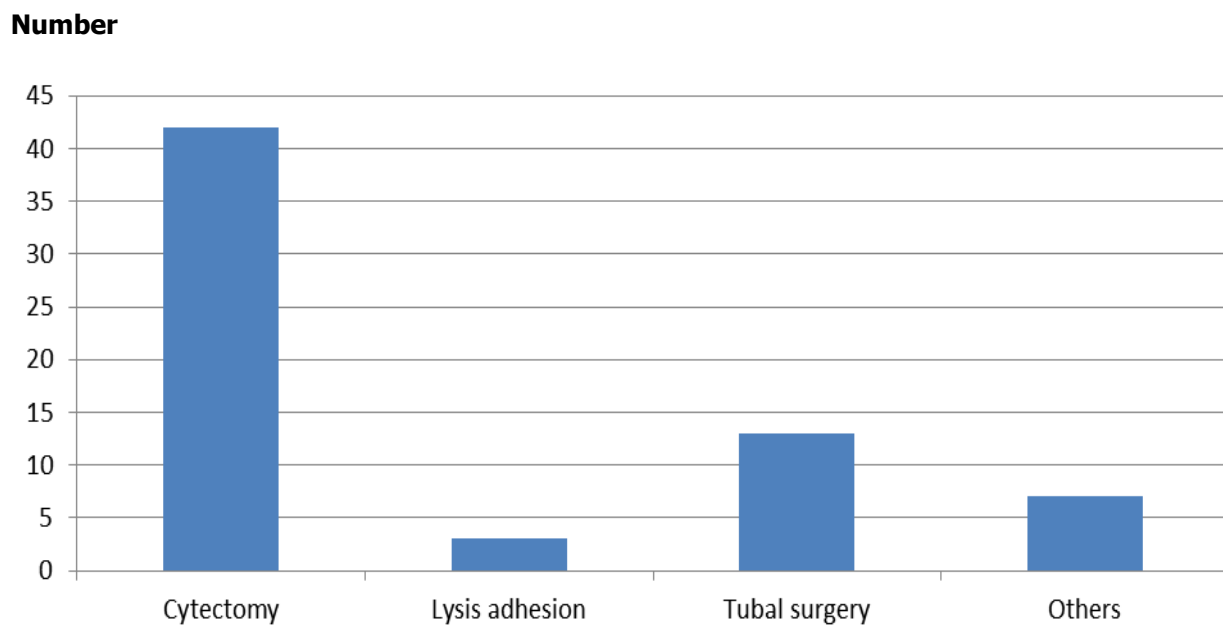


Figure XI. Number of laparoscopic procedures in infertile patients

VI. Number of laparoscopic procedures in gynecologic patient

Procedure	Diagnosis / finding	Number	Percent
Unilateral / bilateral Cystectomy with or without lysis adhesion	Endometrioma / dermoid cyst	36	39.6
Salpingectomy	Tubal pregnancy	1	1.1
Salpingostomy		1	1.1
Remove conceptive product		1	1.1
TLH	Dermoid cyst / Myoma Uteri / Mental retardation / Adenomyosis	7	7.7
TLH & Unilateral or Bilateral salpingectomy with/without SO	Myoma uteri/Hypermenorrhea /Endometriosis	15	16.5
TLH +/- BSO (Cooperation with Uro-Gyn unit)	Myoma uteri	1	1.1
Single port incision laparoscopic hysterectomy (Cooperation with Uro-Gyn unit)	Adenomyosis / Dermoid cyst / Mental retardation	1	1.1
Lysis adhesion	Severe pelvic adhesion	7	7.7
Uro-gynecology & pelvic reconstruction surgery (Cooperation with Uro-Gyn unit)	Uro-gynecologic problem	20	22.0
Myomectomy	Myoma uteri	1	1.1
Total		91	100

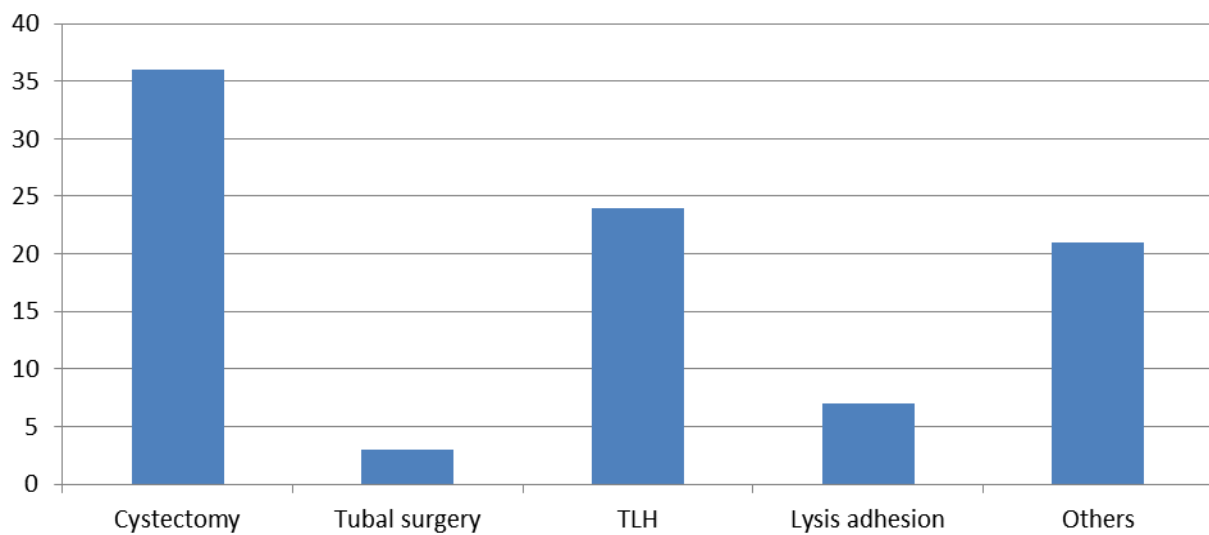
Number

Figure XII. Number of laparoscopic procedures in infertile patient

VII. Number of explore laparotomy procedures and other surgery in infertile patient

Procedure	Diagnosis / finding	Number
Myomectomy and dye test	Myoma uteri	19
Myomectomy with fimbrioplasty and dye test	Myoma uteri with tubal obstruction	3
Myomectomy with lysis adhesion	Myoma uterin and pelvic adhesion	1
Myomectomy with cystectomy and dye test	Myoma uteri and ovarian cyst	2
Reversal tubal sterilization	S/P Tubal resection	5
Reversal tubal sterilization and myomectomy	S/P Tubal resection and myoma uteri	1
Oophorectomy with adenomyosis and dye test	Endometrioma with adenomyosis	1
Ovarian cystectomy with dye test	Ovarian cyst	1
Ovarian cystectomy with SO	Endometrioma	1
Total		34

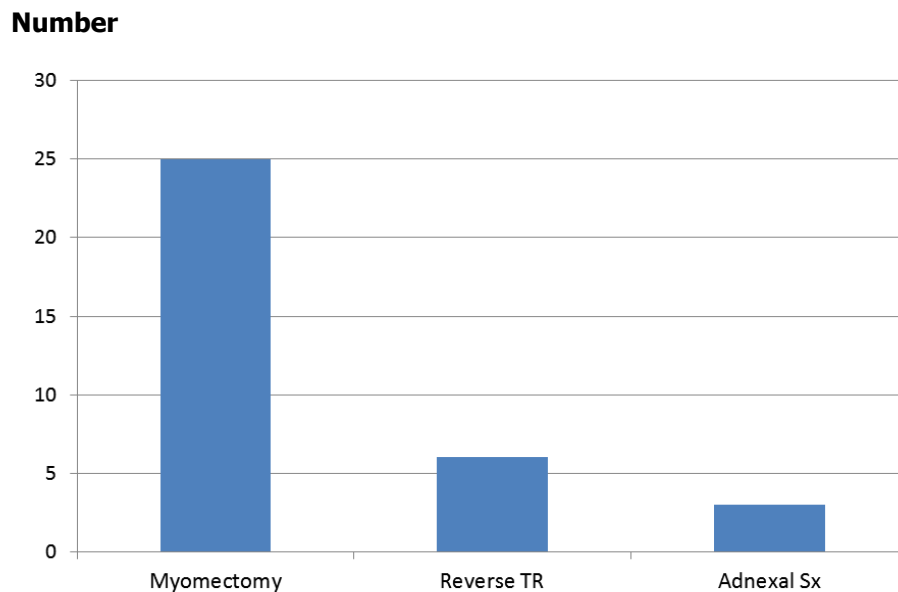


Figure XIII. Number of explore laparotomy procedures in infertile patient

VIII. Number of explore laparotomy procedures in gynecologic patients

Procedure	Diagnosis / finding	Number
TAH with ovarian cystectomy	Myoma uteri / Hypermenorrhea	1
TAH with bilateral salpingectomy	Myoma uteri	3
TAH + BSO or SO	Myoma uteri / Adenomyosis	8
	Severe endometriosis	1
	Ovarian tumor	3
Myomectomy	Myoma uteri	8
Myomectomy & cystectomy	Myoma uteri & ovarian cyst	2
Vaginoplasty	Transverse vaginal septum	4
Salpingo-oophorectomy	Ruptured ovarian cyst	1
Imperforated hymen	Cruciat incision	1
Aspirate content from ovarian cyst	Endometrioma	1
Repaired or Reptained vaginal mold / PV for dilatation	Vaginal stenosis	7
Total		40

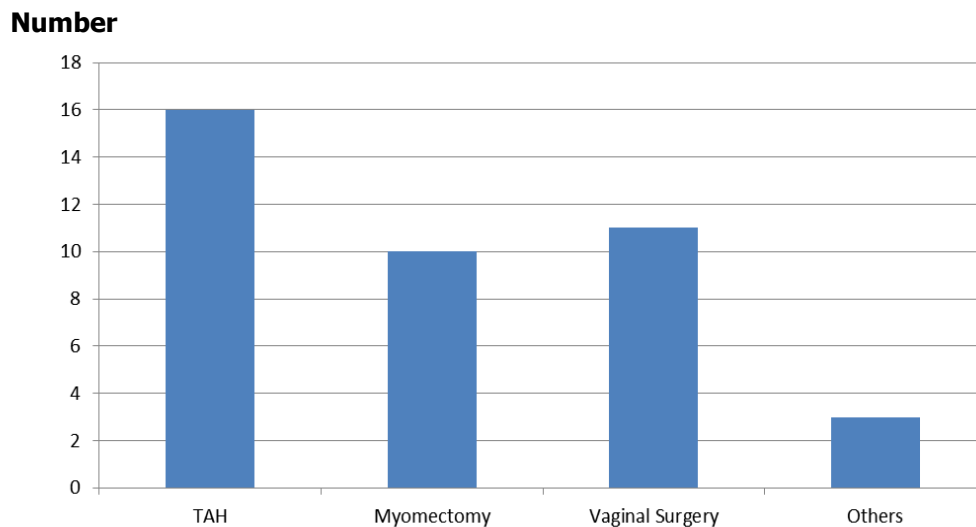


Figure XVI. Number of explore laparotomy procedures in gynecologic patient

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	5	47
PCOS	32	227
Anovulation / irregular menstruation	2	48
Primary amenorrhea	4	20
Secondary amenorrhea	28	103
oligomenorrhea	1	3
Mullerian agenesis	1	2
Recurrent pregnancy loss	32	62
Premature ovarian failure	2	12
Congenital adrenal hyperplasia	1	8
AUB / Hypermenorrhea	21	62
Perimenopause / Surgical menopause	4	8
Gonadal dysgenesis	-	15
Turner's syndrome	6	46
Pituitary disorder	-	55
Mental retardation	2	3
Uterine didelphys / Septate uterus	5	12
Precocious puberty	4	4
Asherman syndrome	4	22
Mccune Albright syndrome	-	4
Hersutism	-	4
Labial agglutination	2	5
Gonadal dysgenesis	-	15
Hypergonadotropic Hypogonadism	2	29
Endometrial polyp	23	56
Perimenopause / Surgical Menopause / Menopause	8	30
Others	7	-
Total	196	902