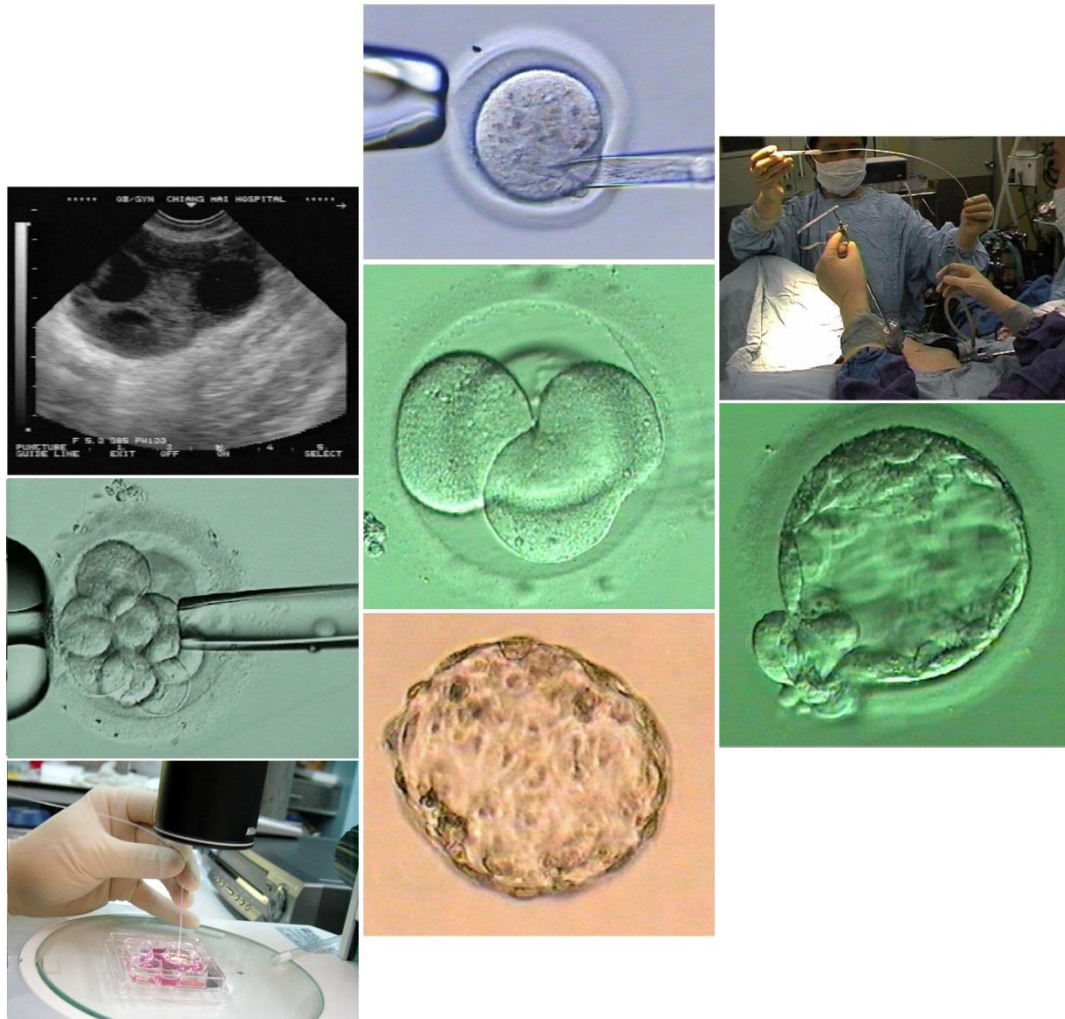


Annual Report

2023



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

ANNUAL REPORT 2023

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

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หน่วยเวชศาสตร์การเจริญพันธุ์
ภาควิชาสูติศาสตร์และนรีเวชวิทยา
คณะแพทยศาสตร์
มหาวิทยาลัยเชียงใหม่

หัวหน้าหน่วย
อาจารย์ประจำหน่วย

อาจารย์พิเศษ
แพทย์หลักสูตรต่อยอด

พยาบาลประจำห้องตรวจ
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PART I**NUMBER OF ATTENDED PATIENTS IN 2023.**

- Infertile patients
- Gynecologic endocrine patients
- Endometriosis patients
- Transgender patients

I. Number of infertile patients

Month	New case (couples)	Ongoing case (couple visits)
January	22	136
February	27	158
March	32	193
April	28	133
May	21	175
June	20	150
July	34	146
August	19	145
September	22	179
October	24	175
November	22	171
December	22	116
Total	293	1877

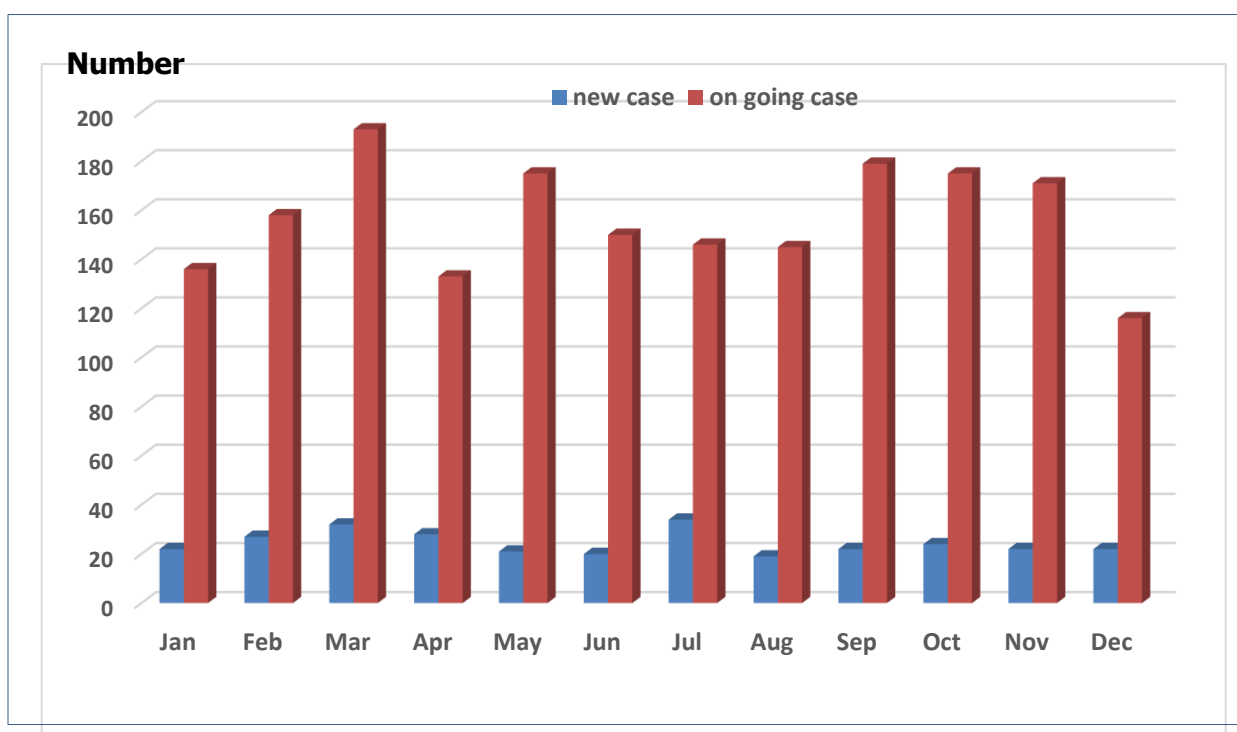


Figure I. Number of infertile couples per month

II. Number of gynecologic endocrine patients

Month	New case (cases)	Ongoing case (visits)
January	2	31
February	3	22
March	5	30
April	6	34
May	7	28
June	3	44
July	2	19
August	5	24
September	0	25
October	2	22
November	2	27
December	5	32
Total	42	338

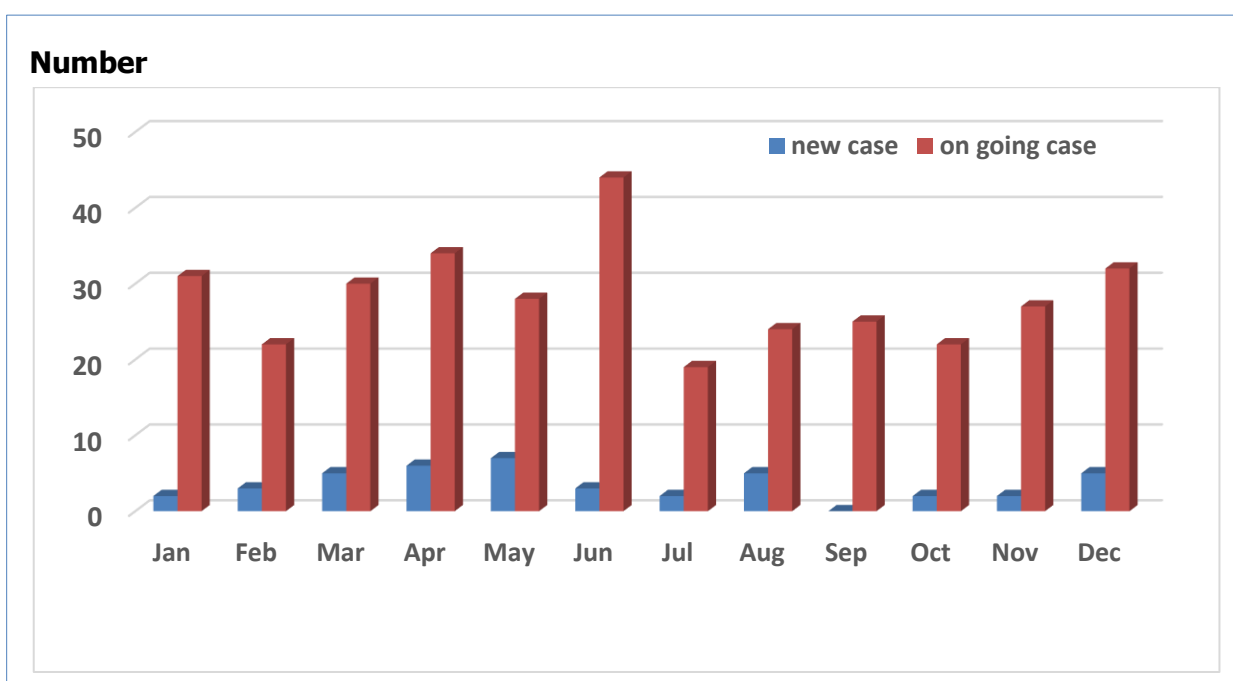


Figure II. Number of endocrine patients per month

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

	New case (cases)	Ongoing case (visits)
January	24	117
February	24	98
March	13	115
April	13	89
May	13	87
June	22	120
July	17	87
August	15	141
September	7	95
October	13	125
November	20	110
December	16	112
Total	197	1296

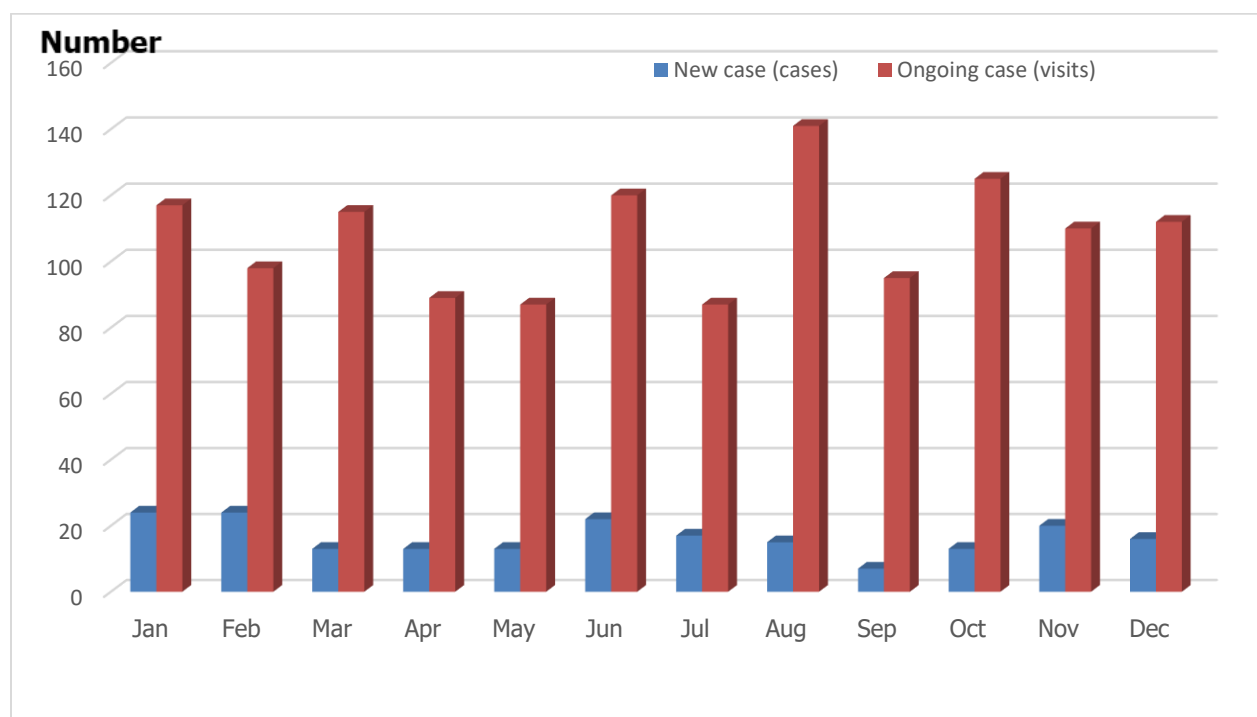


Figure III. Number of endometriosis or pelvic mass patients per month

IV. Number of Transgender patients

Month	New case (cases)	Ongoing case (visits)
January	1	16
February	0	12
March	7	15
April	6	10
May	3	9
June	3	13
July	1	15
August	2	19
September	3	14
October	1	12
November	0	13
December	3	20
Total	30	168

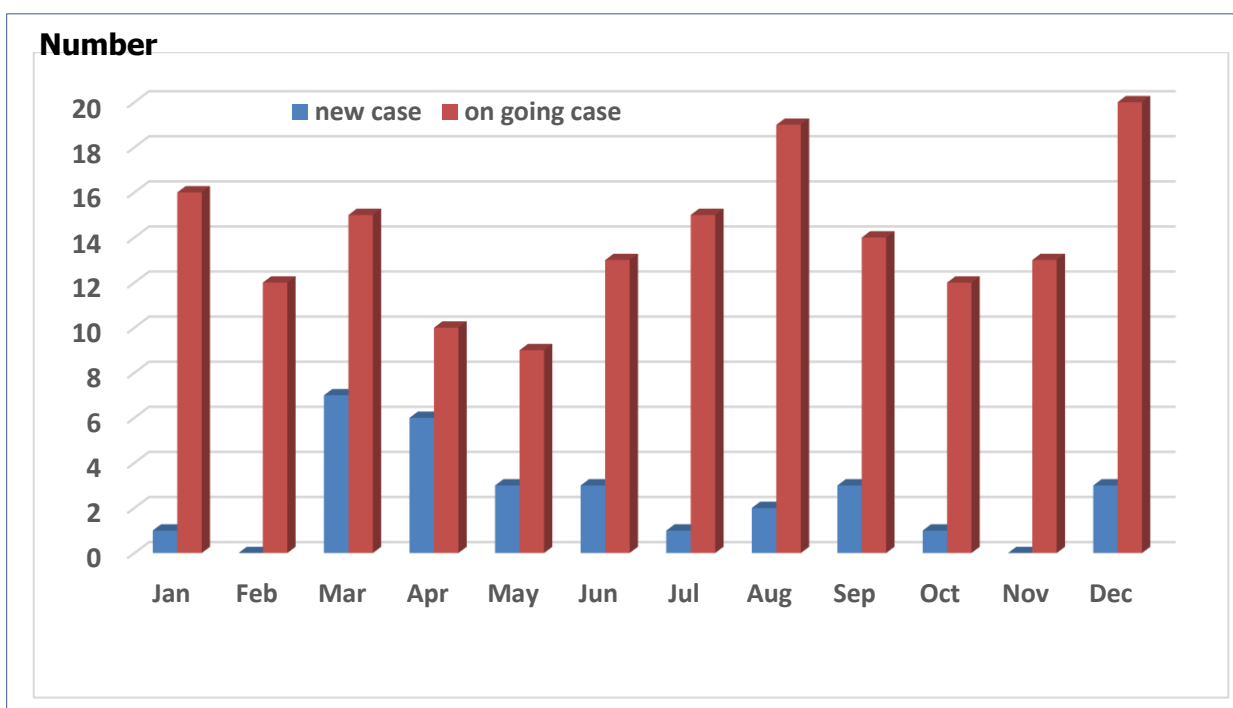


Figure IV. Number of transgender patients per month

PART II**BASELINE CHARACTERISTICS , DIAGNOSIS
AND TREATMENT
OF INFERTILE CASES VISITED IN 2023**

I. Age, duration of marriage & infertility

		Mean $\pm$ SD	Range
Age	Female (years)	34.5 $\pm$ 5.3	20 - 47
	Male (years)	36.8 $\pm$ 6.9	19 - 72
Duration of marriage (months)		71.8 $\pm$ 53.4	6 - 328
Duration of infertility (months)		39.2 $\pm$ 37.1	6 - 180

II. Infertility status

Status	Female (cases)	Male (cases)
Primary infertility	177 (67.1%)	179 (73.9%)
Secondary infertility	87 (32.9 %)	63 (26.1%)
Total	264	242

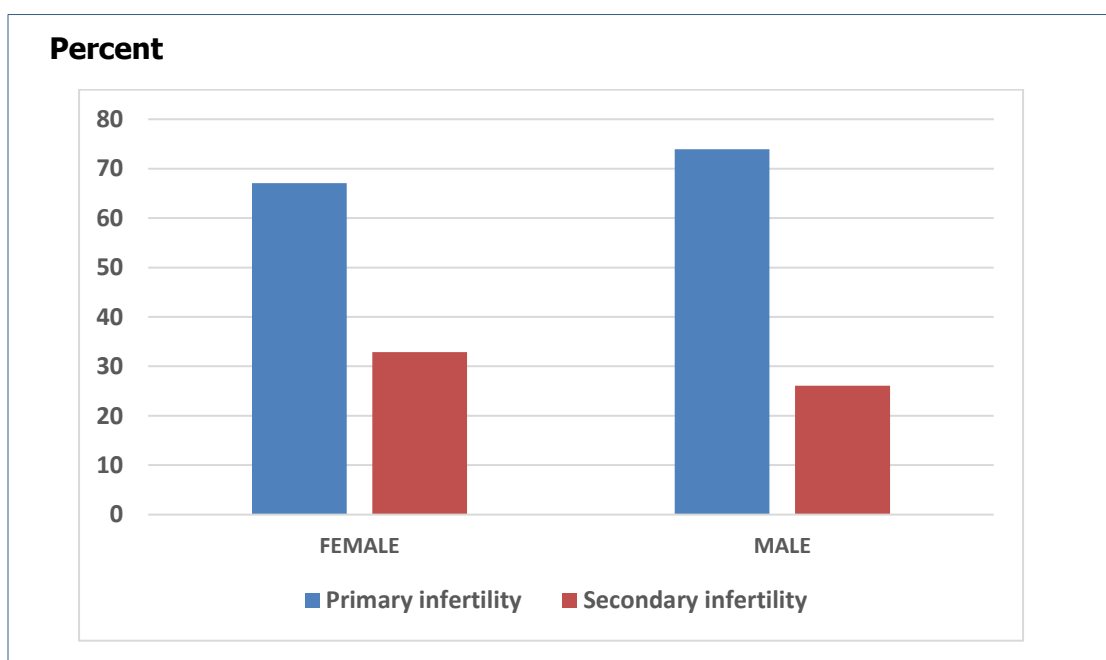


Figure V. Infertility status

III. Diagnosis of male partners

Diagnosis	Number	Percent
No demonstrable cause	198	81.8
Oligozoospermia	5	2.1
Azoospermia	8	3.3
Oligo-asthenozoospermia	10	4.1
Asthenozoospermia	10	4.1
Teratozoospermia	10	4.1
anti HIV positive	1	0.4
Total	242	100

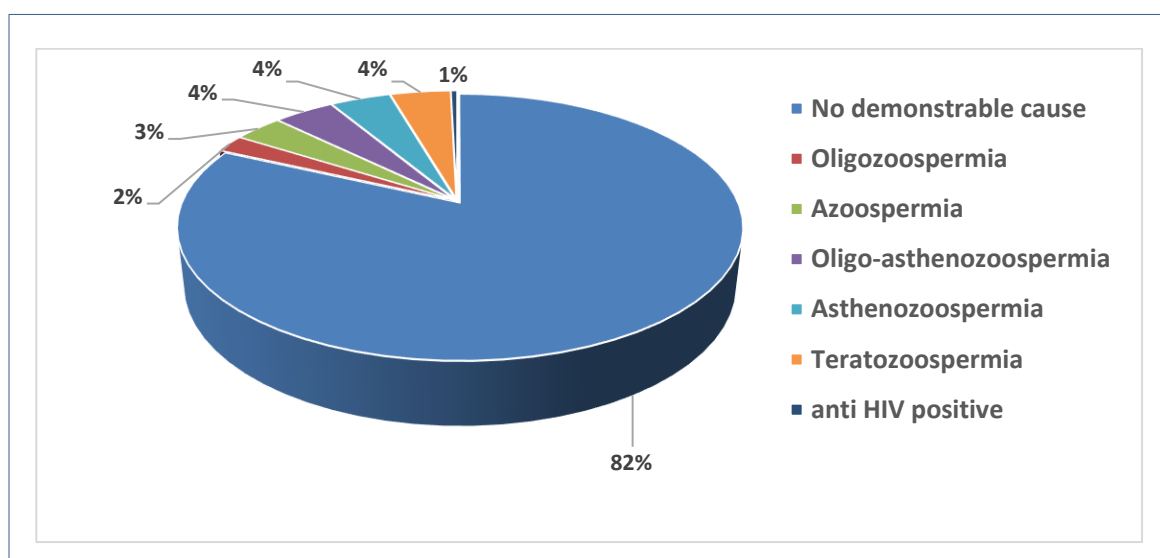


Figure VI. Diagnosis of male partners

IV. Distribution of A.R.T. Treatment

Treatment	Number (cycles)	Percent
Ovulation induction and timing sexual intercourse (OI + timing SI)	23	13.5
Intrauterine insemination (IUI)	68	39.8
Therapeutic insemination using frozen donor sperm (TDI)	7	4.1
In vitro fertilization (IVF)	15	8.8
Intracytoplasmic sperm injection (ICSI)	58	33.9
Total cycles of treatment	171	100

Note : Fresh embryos transfer : 1 cycle

Frozen-thawed embryos transfer (FET) : 122 cycles

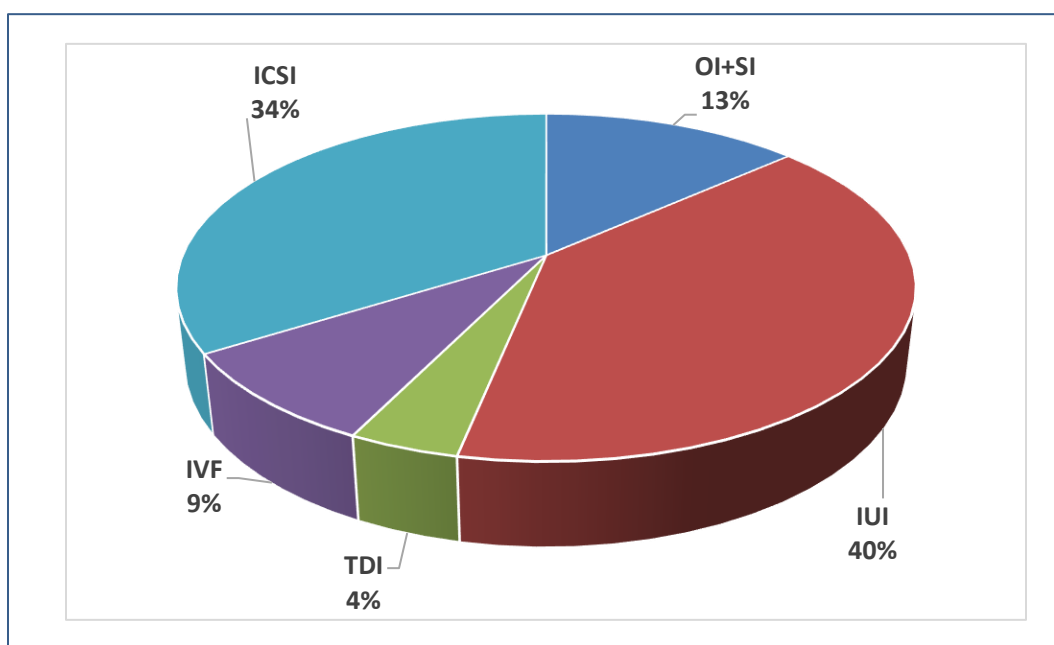


Figure VII. Percent of Infertility Treatments

V. Distribution of Embryo Transfer (ET) Cycle

Treatment	Number (cycles)	Percent
Fresh embryo transfer / IVF	-	-
Fresh embryo transfer / ICSI	1	0.8
Frozen-thawed embryo transfer / IVF	45	36.6
Frozen-thawed embryo transfer / ICSI	77	62.6
Total cycles of treatment	123	100

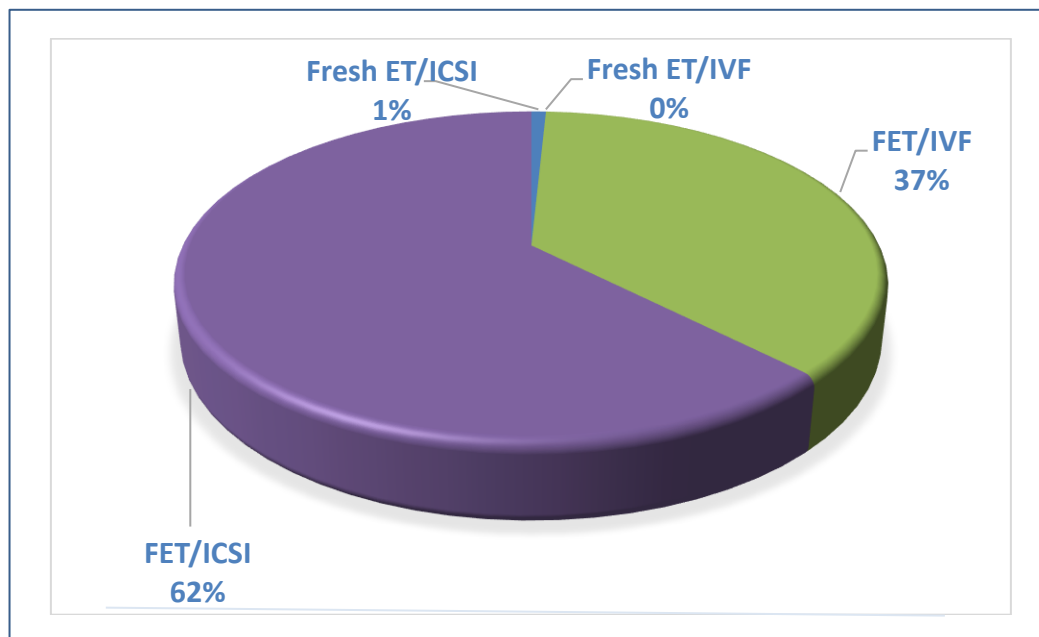


Figure VIII. Percent of embryo transfer treatments

VI. Number of A.R.T cycles per month and pregnancy rate

Month		IUI	TDI	IVF	ICSI	Oocyte freezing	FET/ IVF	FET/ ICSI
January		8	1	2	3	-	4	1
February		3	1	1	9	-	3	6
March		6	-	4	6	-	-	10
April		5	-	-	4	-	1	6
May		7	-	3	4	-	8	6
Jun		7	-	1	4	-	7	2
July		3	-	-	3	-	5	9
August		4	1	-	5	-	5	7
September		9	1	-	8	-	1	8
October		8	1	-	5	-	4	11
November		8	1	4	4	-	-	5
December		-	1	-	3	-	7	7
Total (cycles)		68	7	15	58	-	45	78
Fertilization rate (%)				57.4	67.9			
Thawed embryo survival rate (%)							96.8 %	93.9 %
Further thawed embryo development rate (%)							66.4 %	70.6 %
Number of embryos transfer				-	1		73	103
Clinical pregnancy (case(s))		1	1	-	0	-	19	24
Number of gestational sac with fetal heart activity	1 sac	1	1	-	-	-	15	16
	2 sacs	-	-	-	-	-	3	1
Abortion (case(s))		-	-	-	-	-	-	-
Ectopic pregnancy (case)		-	-	-	-	-	-	-
Clinical pregnancy rate (%)	Total	1.5% *	14.3% *	-	-	-	42.2%**	30.8%**
	Good prognosis***	-					30.2%	
	Poor prognosis***	3.2%					35.3%	

* pregnancy rate per stimulation cycle ** pregnancy rate per transferred cycle

***** A poor prognosis has been determined based on any one of the following criteria.**

ET case :

- BMI > 30 kg/m²
- IVF/IUI attempt > 2 cycles
- Recurrent implantation failure $\geq$ 3 times)
- Antral follicle count < 5 follicles and/or AMH < 1 ng/ml
- Poor ovarian reserve (oocyte retrieved < 3 follicles per cycle)
- Surgical sperm recovery sperm
- Poor prognosis underlying disease, ~~then~~ Poor controlled hypertension, Chronic renal failure, Received anti-viral medication
- Severe Oligozoospermia (<1 million/ml)
- Age $\geq$ 35 years

IUI case :

- Age $\geq$ 35 years
- BMI > 30 kg/m²
- $\geq$ 2 years trying to conceive
- Unknown tubal patency
- IUI attempt
- IVF attempt
- Poor prognosis underlying disease
- Motile sperm < 10 million/ml (before preparation)

PART III**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 patients (years)	34.1 $\pm$ 4.6	22 - 39	15 cycles
Number of oocyte retrieved	16.1 $\pm$ 12.4	3 – 43	242 oocytes
Number of MII oocyte			
Number of normal fertilization	9.3 $\pm$ 8.4	1 - 28	139 oocytes
Normal fertilization rate			57.4 %
Number of cleavage stage embryo	9.0 $\pm$ 8.5	1 - 28	136 embryos
Cleavage rate			97.8 %
Number of embryo transfer	-	-	-
Number of embryo freezing	5.5 $\pm$ 5.4	0 - 20	82 embryos

II. Intracytoplasmic sperm injection (ICSI) cycle

ICSI cycle	mean $\pm$ SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.6 $\pm$ 7.7	23 - 44	58 cycles
Number of oocyte retrieved	12.8 $\pm$ 10.4	0 - 56	745 oocytes
Number of M II oocytes retrieved	10.3 $\pm$ 8.4	0 - 42	579 oocytes
Number of normal fertilized embryos	6.9 $\pm$ 5.4	1 - 31	395 oocytes
Fertilization rate			68.2 %
Number of cleavage stage embryo	6.9 $\pm$ 5.4	1 - 31	394 embryos
Cleavage rate			99.7 %
Number of embryo transfer	-	-	1 embryos
Number of embryo freezing	4.2 $\pm$ 3.6	0 - 20	243 embryos

III. Oocyte freezing cycle

OPU cycle	mean $\pm$ SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	-	-	-
Number of oocyte retrieved	-	-	-
Number of M II oocytes retrieved and freezing	-	-	-

IV. Frozen thawed embryo transfer (FET) : IVF embryo

Frozen-thawed Embryo transfer cycle (FET)	mean $\pm$ SD (per cycle)	Range (per cycle)	Total (per year)
Age of patients (years)	36.1 $\pm$ 4.6	23 - 48	
Number of embryo thawing	2.7 $\pm$ 1.1	1 - 5	126
Number of embryo survived	2.6 $\pm$ 1.1	0 - 5	122
Thawed embryo survival rate (immediately)			96.8 %
Number of embryo transfer	1.6 $\pm$ 0.6	1 - 3	73
Number of embryo freezing back			8
Further cleavage rate after thawing			66.4 %

V. Frozen thawed embryo transfer (FET) : ICSI embryo

Frozen-thawed Embryo transfer cycle (FET)	mean $\pm$ SD (per cycle)	Range (per cycle)	Total (per year)
Age of patient (years)	35.9 $\pm$ 4.7	23 - 44	
Number of embryo thawing	2.1 $\pm$ 1.2	1 - 7	163
Number of embryo survived	1.9 $\pm$ 1.2	0 - 7	153
Thawed embryo survival rate (immediately)			93.9 %
Number of embryo transfer	1.3 $\pm$ 0.5	1- 2	103
Number of embryo freezing back			5
Further cleavage rate after thawing			70.6 %

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

a. Fresh embryos transfer cycle (IVF cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy	Abortion
<34	7	-	-	-	-
≥34-39	8	-	-	-	-
≥40	-	-	-	-	-
total	15	-	-	-	-

b. Fresh embryos transfer cycle (ICSI cycle)

Age (years)	Number of OPU cycle	Number of ET cycle	Chemical Pregnancy	Clinical Pregnancy	Abortion
<34	17	-	-	-	-
≥34-39	32	1	-	-	-
≥40	9	-	-	-	-
total	58	-	-	-	-

c. Frozen embryos transfer cycle (IVF embryo)

Age (years)	Number of ET cycle	No Pregnancy	Chemical Pregnancy	Clinical Pregnancy		Abortion
				Single ton	twin	
<34	13	6	7	3	2	-
≥34-39	25	12	13	12	1	-
≥40	7	7	-	-	-	-
total	45	25	20	15	3	-

d. Frozen embryos transfer cycle (ICSI embryo)

Age (years)	Number of ET cycle	No Pregnancy	Chemical Pregnancy	Clinical Pregnancy		Abortion
				Single ton	twin	
<34	21	12	8	5	-	-
≥34-39	43	32	10	8	-	-
≥40	14	9	5	3	1	-
total	78	53	23	16	1	-

VII. Pregnancy outcome of total FET by prognostic factors of female and male patients

	Number of Pregnancy (%)	Number of No Pregnancy (%)	Total
Good prognosis	25 (35.2%)	46 (64.8%)	71
Poor prognosis	18 (35.3%)	33 (64.7%)	51
Total	43 (35.2%)	79 9 (64.8%)	122

PART VI**ENDOSCOPIC PROCEDURES
&
OTHER SURGERIES**

I. Number of hysteroscopic procedures in infertile patients

Hysteroscopic procedure	Number
Hysteroscopic endometrial polypectomy (+/- Curettage)	22
Hysteroscopic myomectomy (+/- Curettage)	2
Hysteroscopic resection of intrauterine septum / adhesion / lesion	10
Hysteroscopic examination in patients # with history of infertility only # with history of infertility & habitual abortion # with recurrent implantation failure	5 6 3
Hysteroscopic cervical dilatation	6
Total	54

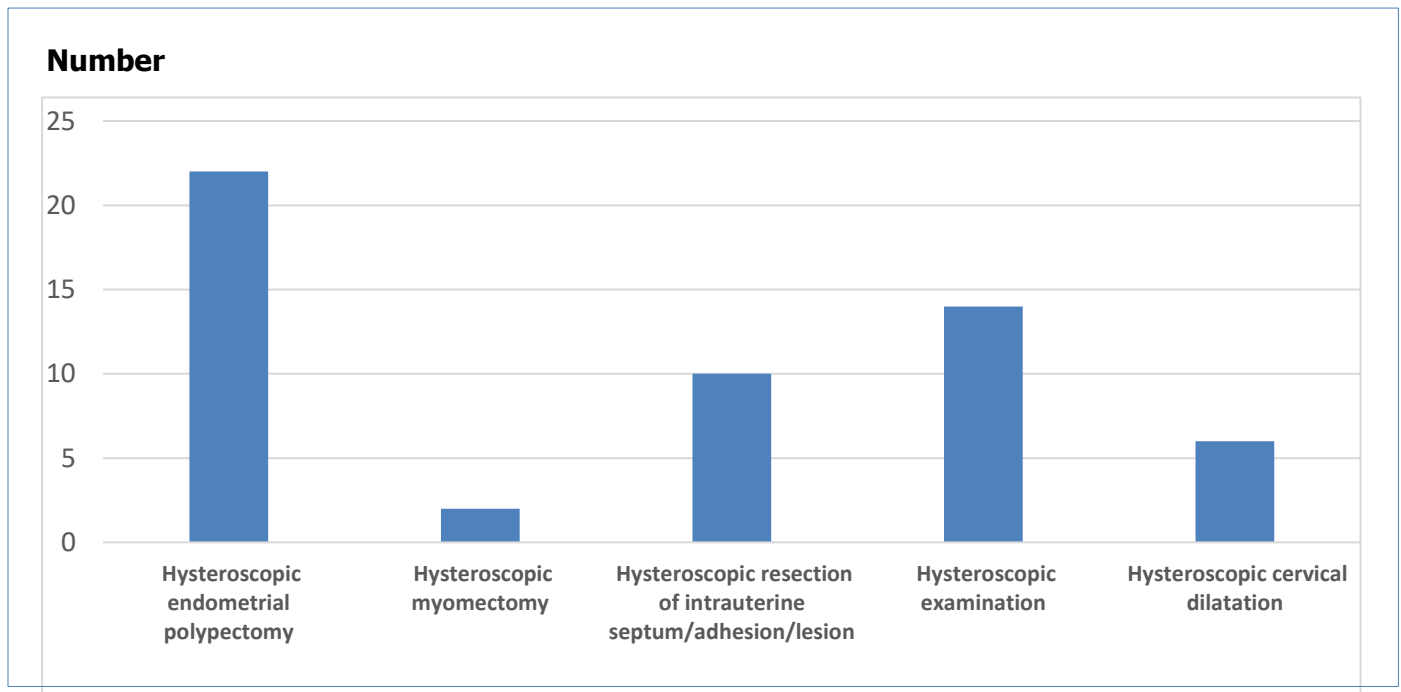


Figure IX. Number of hysteroscopic procedures in infertile patients

II. Number of hysteroscopic procedures in gynecologic patients

Hysteroscopic procedure / Diagnosis	Number
Hysteroscopic endometrial polypectomy (+/- curettage)	33
Hysteroscopic myomectomy / resection of intrauterine mass or lesion (+/- curettage)	16
Hysteroscopic examination in patient with history of recurrent pregnancy loss	3
Hysteroscopic examination in : # AUB # post-menopausal bleeding patients	2 3
Hysteroscopy for IUD removal	1
Vaginoscopic examination : s/p vaginoplasty	2
Total	60

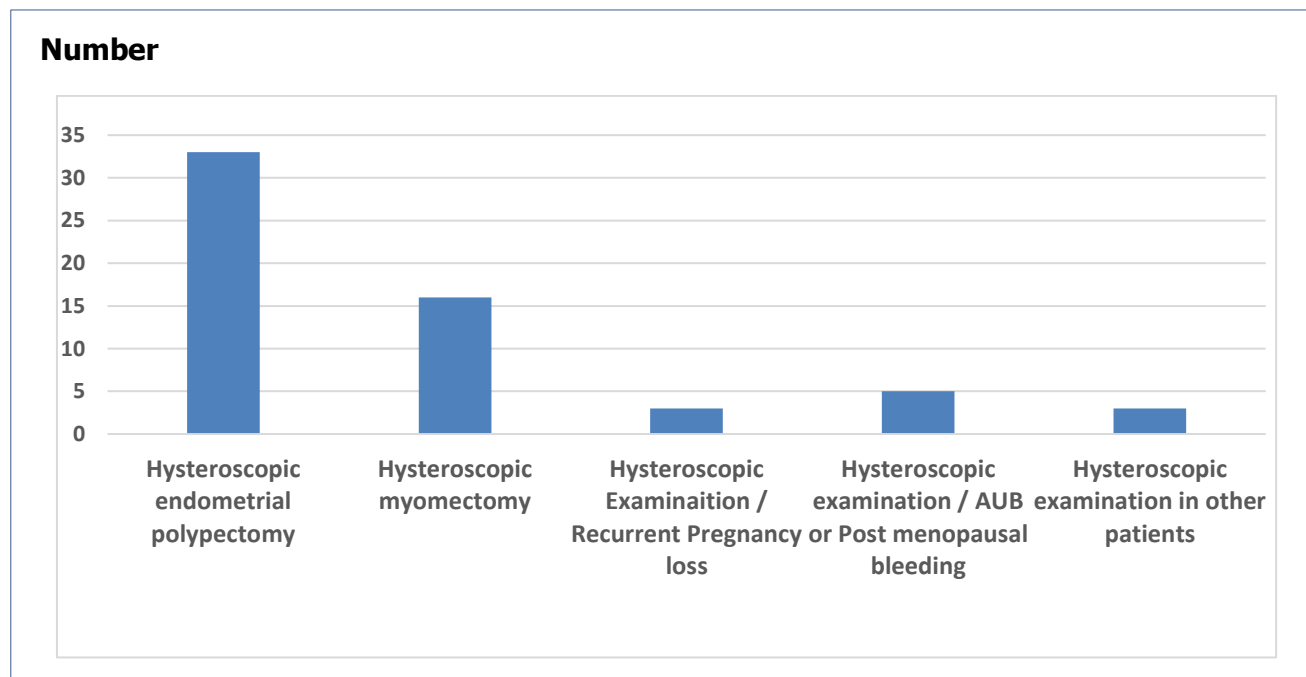


Figure X. Number of hysteroscopic procedures in gynecologic patients

III. Number of laparoscopic procedures in infertile patients

Procedure	Diagnosis / finding	Number
Cystectomy & dye test	Ovarian cyst / endometrioma	2
Cystectomy & myomectomy & dye test (+/- lysis adhesion)	Ovarian cyst with myoma uteri	3
Cystectomy & lysis adhesion & dye test	Ovarian cyst / endometrioma with pelvic adhesion	9
Cystectomy & salpingectomy / fimbrioplasty & dye test (+/- lysis adhesion)	Ovarian cyst / endometrioma with hydrosalpinx	5
Lysis adhesion & Salpingectomy & dye test (+/- tubal occlusion)	Pelvic adhesion & Hydrosalpinx	2
Lysis adhesion & Cauterization of endometriotic spot & dye test	Pelvic adhesion & Endometriosis	2
Salpingectomy +/- Myomectomy	Hydrosalpinx +/- Myoma uteri	3
Laparoscopic examination & dye test	Infertility	6
Total		32

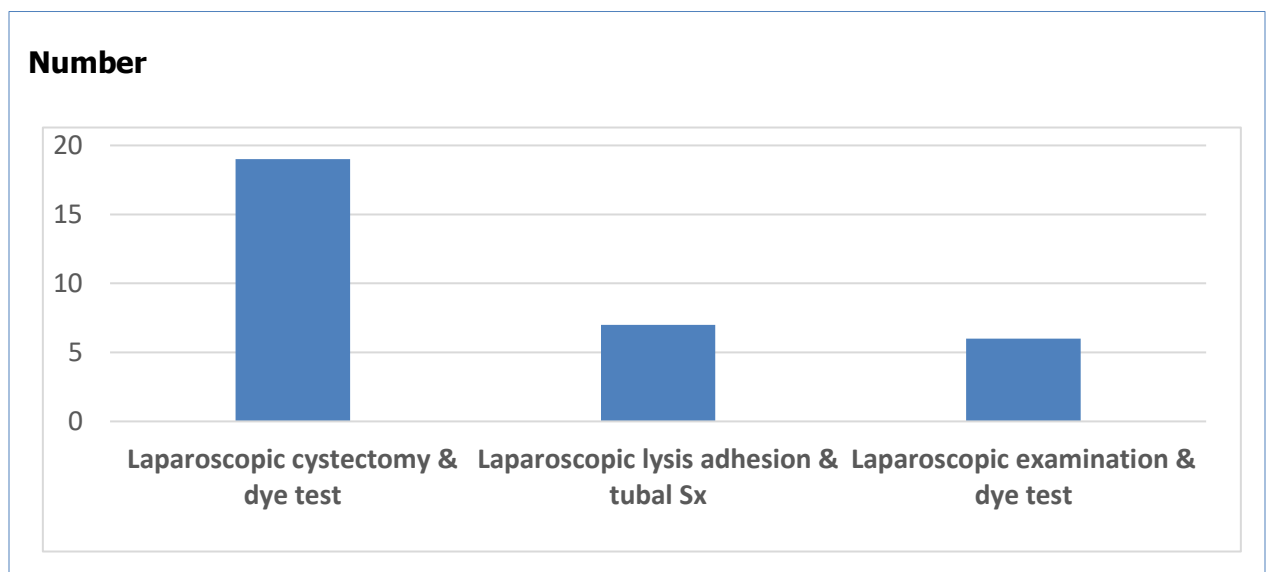


Figure XI. Number of laparoscopic procedures in infertile patients

VI. Number of laparoscopic procedures in gynecologic patients

Procedure	Diagnosis	Number
Laparoscopic unilateral / bilateral cystectomy +/- lysis adhesion	Endometrioma / Dermoid cyst	25
Laparoscopic salpingectomy	Tubal pregnancy	2
Total laparoscopic hysterectomy (TLH)	Myoma uteri / Adenomyosis / Mental retardation	2
TLH & unilateral / bilateral salpingo-oophorectomy (+/- lysis adhesion)	Myoma uteri / Endometrium hyperplasia / Ovarian cyst	29
LAVH & Laparoscopic lysis adhesion	Myoma uteri & pelvic adhesion	1
Total		59

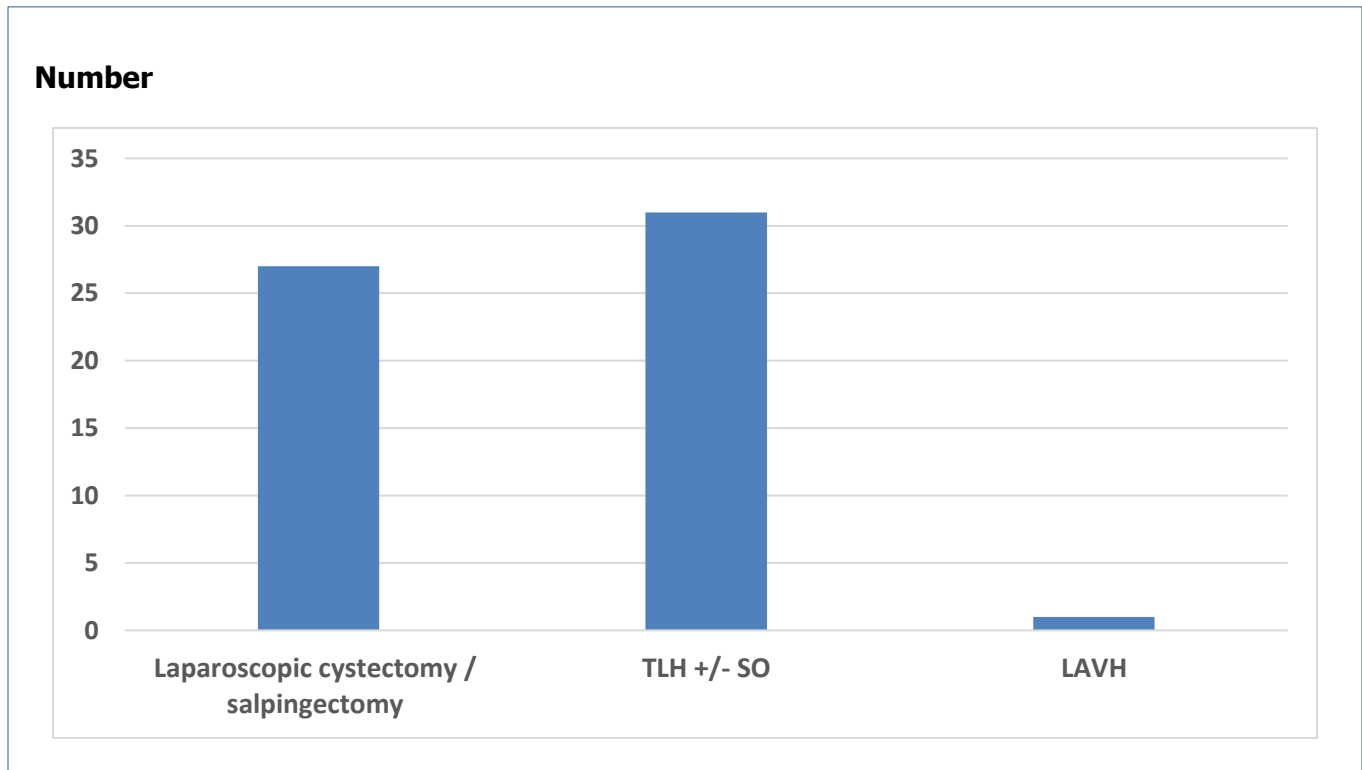


Figure XII. Number of laparoscopic procedures in gynecologic patients

V. Number of explore laparotomy procedures and others in infertile patients

Procedure	Diagnosis / finding	Number
Myomectomy +/- cystectomy +/- lysis adhesion +/- dye test	Myoma uteri & Ovarian cyst +/- pelvic adhesion	3
Reversal tubal sterilization	S/P Tubal resection	6
Salpingectomy & lysis adhesion	Bilateral hydrosalpinx & severe pelvic adhesion	1
Total		10

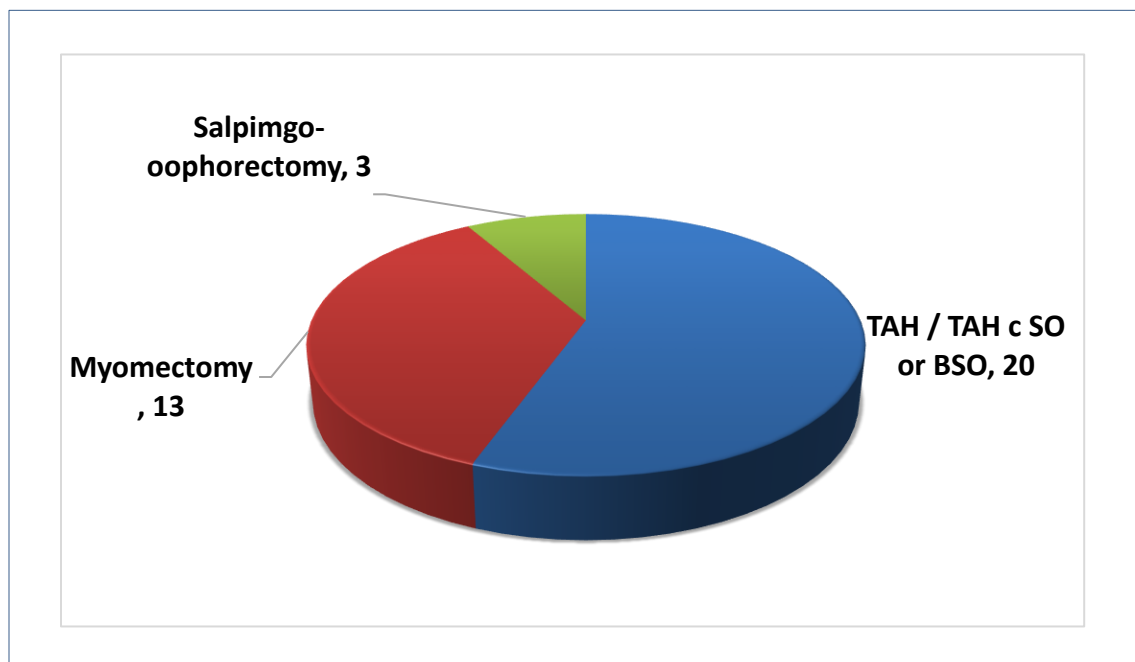


Figure XIII. Number of explore laparotomy procedures and others in infertile patients

VI. Number of explore laparotomy proceduers and others in gynecologic patients

Procedure	Diagnosis / finding	Number
TAH	Myoma uteri with hypermenorrhea	1
TAH & uni / bilateral salpingo-oophorectomy	Myoma uteri / Adenomyosis	15
	Ovarian tumor	2
	Complex atypical hyperplasia	2
Myomectomy	Myoma uteri	13
Salpingo-oophorectomy	Huge ovarian cyst	3
Total		36

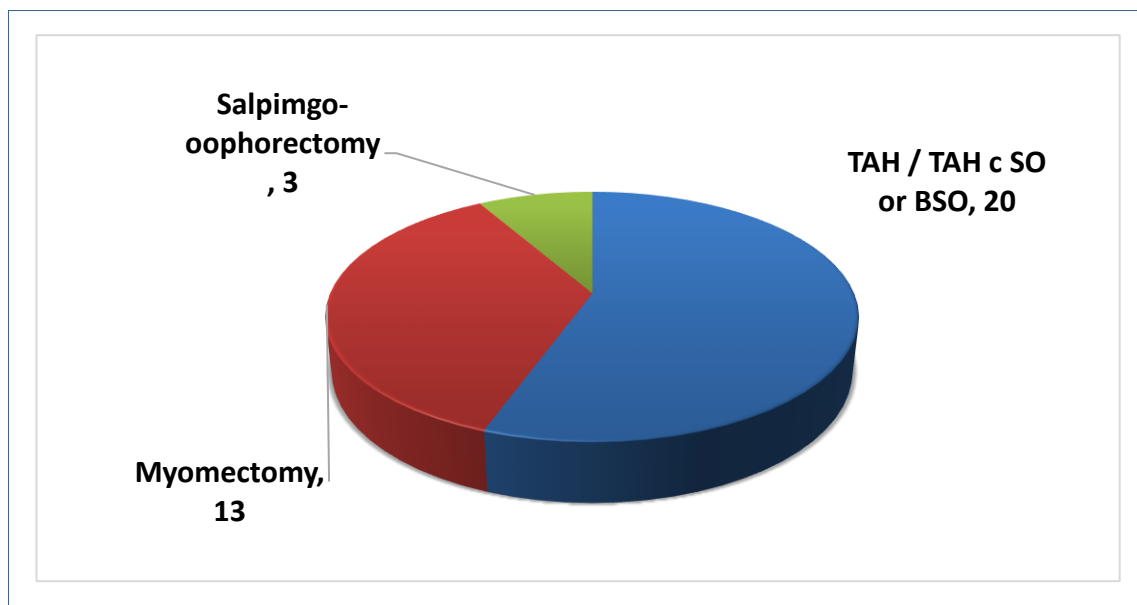


Figure XIV. Number of explore laparotomy procedures in gynecologic patients

PART V

NUMBER OF GYNECOLOGIC ENDOCRINE PATIENT

Distribution of gynecologic endocrine patients

Diagnosis	No. of cases	
	New case (cases)	On going (visits)
Hyperprolactinemia / Macro- or Micro-adenoma of pituitary gland / Pituitary adenoma / Galactorhea	7	66
PCOS	22	148
Anovulation / irregular menstruation	0	20
Primary amenorrhea	6	15
Secondary amenorrhea	9	46
Mullerian agenesis	-	-
Recurrent pregnancy loss	12	14
Premature ovarian failure	-	-
Congenital adrenal hyperplasia	-	1
AUB / Hypermenorrhea	17	53
Gonadal dysgenesis	-	2
Turner's syndrome	-	-
Pituitary disorder	1	33
Hersutism	-	2
Asherman syndrome	1	10
Labial agglutination	-	8
Hypogonadotrophic hypogonadism	-	5
Hypergonadotrophic hypogonadism	2	7