An investigation of 51 publications by a single author due to doubts about data integrity.

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Abstract

Background: We noticed two unusual three-arm randomised controlled trials (RCTs) from Menoufia University, a centre where several fabricated papers in Obstetrics and Gynaecology have recently been identified. We, therefore, evaluated the published studies by the lead author, Dr M. Rezk, for research integrity.

Methods: We searched for RCTs and cohort studies authored by Dr Rezk, and compared recruitment periods, numbers and study submission dates. We read the publications carefully to identify any unusual features.

Results: Dr Rezk authored 51 studies, 17 RCTs and 34 cohort studies. Two pairs of RCTs (four trials) showed extensive data copying of baseline and outcome data. Another set of four trials and two cohort studies each recruited identical patients from the same hospital over overlapping time periods. The reported recruitment rates in two of those RCTs were implausible, and there were frequent examples of identical baseline data between the same two RCTs and a third trial. In 15 of the trials, we were able to compare the number of participants allocated to each group. In two, the method of randomisation (shuffled cards) would result in exactly equal-sized groups. In eight of the other thirteen, exactly equal-sized groups were achieved, and in two further trials, differential loss to follow-up led to exactly equal-sized groups for analysis.

Nineteen of 34 cohort studies were reported to be prospective or to include a prospective component, but 11 of these were received by the journal before the last participant could have been followed up. One cohort reported a biologically implausible rate of disease and another an implausible recruitment rate. Two cohorts of women with hypertension in pregnancy reported identical summary statistics on multiple occasions in the tables displaying baseline characteristics. Two other cohorts of women with rheumatic heart disease in pregnancy, with identical recruitment criteria and overlapping recruitment periods, reported implausible differences in baseline BMI and neonatal mortality. Finally the probability of observing the excess of even numbered categorical variables reported in Dr Rezk's papers overall is infinitesimal.

Conclusions: Our assessment of the work of Dr Rezk shows *prima facie* evidence of data fabrication. We call for an investigation of these studies, including assessment and re-analysis of the original data. Until then, the studies of Dr Rezk should neither directly nor through meta-analysis be used to inform clinical practice.

Background

In 2019 and 2020, two unusual three-arm RCTs authored by Dr M. Rezk from the department of Obstetrics and Gynaecology in Menoufia University were published (1, 2). It was unclear how the randomization resulted in exactly the same number of participants in all 3 groups, how exactly the components of the placebo (vitamin-C tablets) compared with the tablets representing the active treatment, whether an Institutional Review Board (IRB) or Human Research Ethics Committee (HREC) approved the randomisation of women with a diastolic blood pressure between 105 and 110 mmHg for no treatment, and whether details were recorded and can be made available of any participants in these studies who received dosage adjustments or additional treatment.

Of even more concern, the two RCTs had frequent similarities in outcome data. Two of us raised concerns with both journals where these papers were published. Our letter was published (3) and Dr Rezk replied (4) but did not supply further details. Since data from Salama 2019 had been included in a systematic review on treatment of hypertension in pregnancy (5), two of us (BWM and GRS) wrote another letter expressing our concerns at possibly fabricated data being included in a systematic review of treatment of such a serious condition (6). This second letter was neither reviewed nor published, and we still wait to hear from the journal.

As we were aware of several fabricated papers in Obstetrics and Gynaecology originating from Menoufia University (7-9), we conducted a systematic assessment of RCTs and cohort studies, authored or co-authored by Dr Rezk using the previously reported methods (10).

Methods

We searched MEDLINE for original RCTs and cohort studies published by Dr M. Rezk from Menoufia University. We also searched the Pan African Clinical Trials register (11) for trials registered by Dr Rezk. We extracted information regarding year of publication, journal, study centres, baseline characteristics, number of participants, outcome data, study start and end dates, and date of submission to the journal.

We calculated the average number of randomized participants per month for each study as the total number of randomized participants divided by the total number of months of recruitment. We obtained the trial registration numbers by searching the Pan African Clinical Trials and International Standard Randomized Controlled Trial Number registers (12).

We reviewed the baseline characteristics of the RCT's Dr Rezk co-authored. We compared the number randomised to each group with the number analysed in each group and related these to the randomisation method. We performed pairwise comparisons of entries in the tables presenting summary statistics for baseline characteristics and outcome measures to look for identical or similar values across RCT's. We compared the values of the mean, standard deviation (SD), percentage, *t*-statistic or *z*-statistic, p-value, and confidence intervals (CI's) where available.

In one case where four RCT's and two cohort studies recruited identical participants, we compared recruitment dates and rates in all six studies. We read carefully the text of the papers reporting the results of the RCT's to look for duplication of data between RCT's. For cohort studies, we compared entry criteria, dates of recruitment, and the numbers of patients recruited.

We used Monte Carlo simulations to generate a p-value for differences between means for each baseline continuous variable. If randomization and data recording are done correctly in all or at least most RCTs, the set of simulation-generated p-values from baseline variables (especially continuous ones) should

be well-approximated by a uniform [0,1] distribution. If the simulation-generated p-values close to either 0 or 1 are over-represented compared to values in the middle of the uniform distribution on [0,1], then it is evidence of systematic baseline imbalance or extreme similarity, which is inconsistent with the assumption that group allocation was properly randomized. We also used the Kolmogorov–Smirnov test, against the uniform distribution [0,1] as the reference distribution, to assess formally the evidence against the null hypothesis that the simulation-generated p-values follow a uniform distribution [2-4].

We reviewed the distribution of values for categorical variables in the baseline and results table for n paper authored by Dr Rezk, and measured to nominal probability of there being the observed number of even values or greater.

The statistical analyses were performed using Stata (v16.0) and the R statistical software (v3.5.1). For this analysis we included all eight trials, including the previously retracted trial.

Results

The randomised trials

We found 17 RCTs (Table 1, Figs. 1 and 2). In all but three RCTs, Dr Rezk was the first author, with the exceptions of SalamaRCT2019 and KandilRCT2018, in both of which he was the corresponding author, and HamzaRCT2016 which is an RCT reported only as abstract. In RezkRCT2019b, Dr Rezk was the first author, but Dr Elsayed Elshamy was the corresponding author. RezkRCT2019a is described as a prospective cohort study in the methods but also includes a description of randomisation. We assume this was an RCT. There were eight RCTs prospectively registered, one retrospectively registered, while RezkRCT2015b was registered retrospectively). Six of the 17 RCTs had a recruitment period that matched exactly a whole year, or the multiple of a year.

Numbers randomised to each group

For twelve RCTs, the randomisation process resulted in exactly equal numbers between groups, and in four of these exactly equal numbers between three different groups (RezkRCT2015d, RezkRCT2016, SalamaRCT2019, RezkRCT2020). In two RCTs, the equal numbers could be explained by the randomisation method being shuffling of equal numbers of cards, albeit only if zero envelopes went missing and no participants withdrew or were lost to follow-up. In one of those RCTs (Salama 2019), the cards had been allocated between two separate pharmacies. In the other 10 RCTs, the method of randomisation would not have inevitably led to equal-sized groups. In two further RCTs, the random allocation led to different sized groups but a differential loss to follow up led to exactly equal-sized groups for analysis (RezkRCT2015a, RezkRCT2015c).

Probability of random sampling for baseline characteristics

For all RCTs authored by Rezk, the cumulative distribution of Monte Carlo simulation showed a uniform distribution ($p = 0.1801$) of baseline variables, representing no evidence that these summaries of all baseline characteristics are not the result of a properly conducted randomization process.

Data copying between RCTs

Salama2019 and Rezk 2020 (Figs. 2a-c, Table 3) were both three-arm RCTs. Two of the randomised arms involved identical treatments (Methyldopa and a control group, with Salama2019 reporting on Nifedipine and Rezk2020 on Labetalol). Although both RCTs recruited patients with identical characteristics from the same hospitals over the same time period and share two authors, neither refers to the other.

The baseline tables in the two papers (Fig. 2a) have (out of 36 reported sample means or counts, not including sample standard deviations) seven identical counts and three values of the sample mean within 0.1 or 0.01 of each other. Using a normal approximation to the individual sampling distribution of each of these summary statistics (see Appendix), the probability of this degree of similarity was less than 0.07 for the three means, and less than 0.06 for each of the seven counts. The maternal outcome tables in the two papers (Fig. 2b) have 11 out of 27 identical values. All eleven of the individual probabilities of similarity are less than 0.15, eight are less than 0.10 and six are less than 0.05. The fetal and neonatal outcome tables in the two papers (Fig. 2c) show 7/32 identical values. The values for “Admission to NICU” and “neonatal mortality” for the “nifedipine” and “control” columns in Salama and the “labetalol” and “control” columns in Rezk appear to have been transposed (yellow squares), so this is effectively four more identical values. For these eleven similarities, all of the individual probabilities of similarity are less than 0.15, eight are less than 0.10 and five are less than 0.05. Even allowing for dependency between these calculated probabilities of similarity due to correlation between baseline variables, all of the individual probabilities are low, with the majority (25 of 32) less than 0.10.

Rezk2015c and Rezk2015e (Figs. 3a-c) are two RCTs on iron therapy in pregnancy, which share two authors, both recruited in Menoufia in overlapping time periods. However, the latter was a multicentre study also recruiting in other centres in the Menoufia directorate. There appears to be data copying between the baselines tables (Fig. 3a), the haemoglobin parameters (Fig. 3b) and the side effects (Fig. 3c).

Trial of endometrial scratching reported in abstract only

One RCT of endometrial scratching in women with unexplained infertility prior to intrauterine insemination appears to have been reported only as an abstract (HamzaRCT2016). Dr M Rezk is the second author. The trial was registered on 12 September 2015, and participants were recruited from 20 September 2015 to 20 April 2016 (seven months). At least two other RCTs of endometrial scratching from Menoufia, albeit with different authors (13, 14), were published around the same time. We found no obvious signs of data copying with those papers. Shaheen (2016) targeted a different population of women, those with recurrent miscarriage, over a different time period, between September 2014 and August 2015. Abd-Elhamid Shaheen, the only author of the recurrent miscarriage paper, is listed as a collaborator on the registration of the Hamza *et al.* trial but not as an author of the abstract. The Helmy2017 RCT recruited similar participants,

infertility of any sort, over an overlapping time period, the first participant on 26 January 2015 and the last participant delivered on 17 July 2016, in the same centre. That trial paper shared no authors with the Hamza abstract or the Shaheen paper and had been registered on clinicaltrials.gov as NCT02345837.

Unpublished RCTs

We found 10 unpublished trial registered on the Pan African Clinical Trials Registry (11) by Dr Rezk (Tables 1 and 2; Fig. 1). All these RCTs have been labelled as completed between 2014 and 2018 but we could not find results published or presented as abstract.

Cohort studies

We found 34 cohort studies (Table 4, Fig. 4). Eighteen cohort studies were reported to be "prospective", while one study reported a five-year retrospective cohort followed immediately by a five-year prospective cohort (Rezk2015f). Twelve prospective recruitment periods began in 2012, albeit on different months of that year. In all these 12 studies, although recruitment periods varied, all were in whole years; that is, a study that started in January ended in January, a study that started in February ended in February, etc

Insufficient time for follow-up between the end of recruitment and paper reception by journal

Eleven reportedly prospective cohorts had journal reception dates that were incompatible with the follow-up reported in the paper (Rezk2015a, Rezk2015b, Rezk2015c, Rezk2016a, Rezk2016d, Rezk2017c, Rezk2017f, Rezk2017g, Rezk2017h, Reda2018, Abdelhamid2019; Table 3). We considered the possibility that some recruitment periods included follow-up. However, since 10 of them reportedly recruited over exactly whole years, this would be incompatible with the vagaries of the recruitment during gestation, the duration of the pregnancy and the timing of delivery for the final participants. The 11th study (Rezk2015b) reportedly recruited 450 pregnant women between 36 and 40 weeks, over a 30-day period, followed them up till delivery, and had the publication received by the journal 21 days later. In total, 24 of 34 cohort studies reportedly recruited over exactly whole years,

Implausible recruitment rates among cohort studies.

Rezk2015f reported 450 pregnant women with SLE during a ten-year period, about 4 recruits per month. For the prospective group, they claimed to have recruited 214 women with SLE out of 13,567 pregnant women, an incidence of 1.7%, compared with the usual reported rate of 1/1000 pregnancies (15). The mixed retrospective and prospective cohort design was similar to an earlier paper from Cairo (16), whose authors had identified 27 pregnant women with SLE in a retrospective cohort and 21 prospectively, albeit without reporting the time period. Rezk2015f did not cite Hendawy *et al*. 2011, and the two papers shared no authors, but the opening sentences of the discussion sections were uncannily close. Rezk2015f "SLE is mainly a disease of women in the childbearing period, and the coexistence of pregnancy is not a rare event. Disease flare during pregnancy leads to poor outcome (5)". Hendawy et al. 2011 "Systemic Lupus Erythematosus (SLE) is mainly a disease of women in the childbearing period, and the coexistence of pregnancy is not a rare event. Disease flare during pregnancy consistently affects pregnancy outcome (7)." References 5 (Rezk2016a) and 7 (Hendawy *et al*. 2011, our reference 16) are the same. Finally, many of the odds ratios in Rezk2015f appear to have been miscalculated.

Rezk2017h reports a monthly recruitment of 159 pregnant women who had platelet assays at both 10–12 weeks and again at 18–20 weeks, maintained over five years in a single centre, Menoufia. Only 22 women out of 9,544 were not followed up till delivery.

Evidence of data copying between cohorts

Comparison of Rezk2016a and Rezk2016b (Table 3; Fig. 5) reported different cohorts of pregnant women with different types of hypertension. Although the recruitment periods and the entry criteria, differed the baseline tables showed evidence of data copying between the cohorts (Fig. 5). Of the five variables reported in both tables (age, parity, BMI, gestation age at diagnosis and delivery) 7/10 samples means were identical in both the "tens" column, the first and second decimal place, differing only by the *same* amount in the "ones" column, and 8/10 sample standard deviations were the *identical* for all digits ("ones" column, first and second decimal place). The chance of this degree of identity, similarity or "exact difference" in one place of a three- or four-digit number in two separate cohorts is not easy to calculate due to the large number of possible "exact differences" but would surely be low based on any sensible statistical model given the precision with which these summary statistics have been reported. A more likely explanation for the common values in the two tables is data fabrication in one or both studies.

Similar participants included in different cohort studies

Rezk2017c and Rezk2015a (Table 3 and Fig. 6) each reported a comparable number of patients (192 v 224) with rheumatic heart disease, recruited in the same clinic over overlapping periods of 3 and 5 years. There is no description as to how the two studies relate to each other. Given the essentially identical inclusion and exclusion criteria, it is difficult to explain the major differences in mean BMI (21 ± 1.2 and 21 ± 1.3 in one study compared with 24.1 ± 2.7 and 28.3 ± 3.6 in each group, Fig. 6) and in neonatal mortality rates (6/192 *vs* 32/204, Table 3).

Similar data and overlapping recruitment periods between RCTs and cohort studies

Four RCTs (RezkRCT2015b, KandilRCT2018, RezkRCT2018b, RezkRCT2019a) and two cohort studies (Kamal2017 and Rezk2016b) all recruited women with clomiphene-resistant PCOS, from the same single centre, during overlapping time periods (Figs. 7).

The recruitment of 109 participants over 3.5 months (59 per month) to (Rezk2018b) is difficult to credit given that participants had each failed to respond to clomiphene for at least three cycles (some as many as six) and that a normal uterine cavity assessment, a normal tubal patency test and the partner's normal semen analysis were additional entry criteria.

The recruitment of 250 participants in Kandil2018 is even less plausible. The study ran for only eight months up to 18 October 2017, “which was the last day of follow up for the last included participant” and included six months follow-up, leaving only two months for recruitment. The paper was submitted on 21 November, 33 days after the last follow-up was completed. Not only was this a surgical trial, but the two treatment arms were laparoscopic or vaginal ultrasound-guided ovarian drilling. The former was done under general anaesthesia and the latter “without anaesthesia with only administration of ketorolac 50 mg by intramuscular injection 30 minutes before the procedure”. Both procedures were reportedly done immediately after menstruation.

The recruitment periods for KandilRCT2018, RezkRCT2018b, and RezkRCT2019a overlapped. From February to May 2017, all three RCTs were reportedly recruiting participants with identical characteristics in the same hospital. None describe how participants were allocated between the different trials.

The baseline FSH and LH values (RezkRCT201b (UOD v BOD) and RezkRCT2018b (C + M v letrozole) are identical (Fig. 7). The basal FSH and LH levels in Table 1 of Rezk2019a contain one identical value, one value with transposed digits and five values with a single digit different from the shared values in Rezk 2015b and Rezk 2018b (Fig. 8)

Rezk2017d, Rezk2017i, RezkRCT2019b, RezkRCT2019d, Rezk2018a, and RezkRCT16_U3 all measured uterine Doppler parameters in women undergoing different types of contraception. They all recruited in Menoufia hospital over overlapping time periods. Three were RCTs and two cohort studies. Despite studying identical treatments (LNG-IUS) in identical patient groups, Rezk 2017 and Rezk 2019 observed major differences in baseline and 6-month Doppler indices on which the authors did not comment. Despite two shared authors and overlapping recruitment periods in the same centre, neither paper cited the other. The two observational studies (Rezk2017d, Rezk2017i) both had submission dates that were incompatible with the report recruitment periods and follow-up duration.

Categorical variables

Our findings are summarised in Table 5. For all tables with categorical variables there was an excess of even numbers. For 35 tables the probability of the observed excess or greater for the single table was $P < 0.05$. one individual table where all 47 categorical variables were even the probability was $P = 0.000000000000007$. Overall, with 925 even numbers and 92 odd numbers, the probability that this has happened by chance is $p = 2.12e\text{-}150$

Summary

Overall, we found 35 problematic papers. These included 14 prospective cohort studies with submission dates that were incompatible with the stated follow-up period, one paper reporting without any comment a rate of SLE in pregnancy about 17 times higher than previous reports, and another cohort study with an implausible recruitment rate. We also found three pairs of RCTs with what appears to be data copying and ten studies with overlapping recruitment of the same participants in the same centre without explanation of how participants were allocated between studies. These are all summarised in a table of problematic studies. Note that this table does not include the 11 studies with exactly balanced randomisation. Finally the probability of observing the excess of even numbered categorical variables in Dr Rezk’s papers overall is infinitesimal.

Discussion

Taken individually, these findings should prompt concern about the possibility of data fabrication. These papers have an author in common, Dr Rezk, who is working in a centre where data fabrication is known to have occurred and which led previously to retractions, and they share co-authors with the co-authors of retracted papers. Taken together, these circumstances raise a very high suspicion of data fabrication. It is difficult to imagine an innocent explanation for all of the above. We have asked Dr Rezk, some of his co-authors, the head of the department Dr Kandil as well as the University leadership for an explanation but never received an answer to any of our concerns.

We suggest that the editors of the relevant journals request that Menoufia University conduct an enquiry. This should involve an independent review of the original datasets. Based on our previous experience as well as that from journal editors (9), we suggest strict timelines. Pending this we suggest that papers authored by Dr Rezk be marked with an expression of concern and should not be used to inform clinical practice through guidelines or meta-analysis until this process has been completed.

Declarations

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Competing interests

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Author Contributions

The authors confirm contribution to the paper as follows: study conception and design: Ben W Mol, Jim G Thornton and Lyle C Gurrin ; data collection: Francis G Muriithi; analysis and interpretation of results: Lyle C Gurrin; draft manuscript preparation: Francis G Muriithi, Lyle C Gurrin, Ben W Mol, Jim G Thornton. All authors reviewed the results and approved the final version of the manuscript.

Ethics approval

None required.

Consent to participate

No human participants were recruited into this study.

Consent to publish

No human participants were recruited into this study.

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Tables

Table 1. 17 published randomised clinical trials of Dr. Rezk

Study	Journal	Authors	Title
RezkRCT2014	J Clin Gynecol Obstet. 2014;3:55-61	Rezk M, Sanada Z, Dawood R, Masooda A, Emarh M, Halaby A	Intracervical Foley Catheter Versus Vaginal Isosorbid Mononitrate for Induction of Labor in Women With Previous One Cesarean Section
RezkRCT2015	Clin Exp Obst Gyn 2015;42:781-4	Rezk M, El-Shamy ES, Massod A, Dawood R, Habeeb R	The safety and acceptability of intravenous fentanyl versus intramuscular pethidine for pain relief during labour
RezkRCT2015a	Eur J Obstet Gynecol 2015;195:27-30	Rezk M, Sayyed T, Masood A, Dawood R.	Nicorandil vs nifedipine for the treatment of preterm labour: a randomized clinical trial.
RezkRCT2015b	Gynecol Endocrinol 2016;32:399-402	Rezk M, Sayyed T, Saleh S	Impact of unilateral versus bilateral laparoscopic ovarian drilling on ovarian reserve and pregnancy rate: a randomized clinical trial clinical trial.
RezkRCT2015c	J Matern Fetal Neonatal Med 2016;29:1387-90.	Rezk M, Dawood R, Abo-Elnasr M, Al Halaby A, Marawan H	Lactoferrin versus ferrous sulphate for the treatment of iron deficiency anemia during pregnancy: a randomized clinical trial
RezkRCT2015d	J Matern Fetal Neonatal Med. 2015;28:93-6	Rezk MA, Sanad Z, Dawood R, Emarh M, Masood A	Comparison of intravaginal misoprostol and intracervical Foley catheter alone or in combination for termination of second trimester pregnancy
RezkRCT2015e	J of Adv. Nutr. & Hum Metabolism 2015;2:740	Rezk M, Kandil M, Dawood R, Shaheen AE, Allam A	Oral lactoferrin versus ferrous sulphate and ferrous fumerate for the treatment of iron deficiency anemia during pregnancy
RezkRCT2016	Obstet Gynecol Int J 2016;5:00163	Rezk M, Kandil M, Saleh S, Shaheen A	Comparison of Levonorgestrel-Releasing Intrauterine System, Medroxyprogesterone and Norethisterone for Treatment of Endometrial Hyperplasia without Atypia: an RCT.
Hamza2016	Fertility and Sterility 2016 106 (3), e322	Hamza H, RezkRCT M, Saad A	Subendometrial vascularity and high sensitive CRP in patients with unexplained infertility undergoing endometrial scratching prior to intrauterine insemination
RezkRCT2017	ARC J of Gyn and Obstetrics 2017;2:13-20	Rezk M, El-Nasr IS	Bilateral Uterine Artery Ligation and Square Sutures versus a Novel Combined Suture for Controlling Bleeding from the Placental Bed in Placenta Previa Centralis at CS: RCT
RezkRCT2018a	Matthew J Gyne Obs 3: 14	Rezk M, Elkelani O, Hamza H, Shawky M, Marawan H	Impact of Etonogestrel Subdermal Implant Versus Depot-Medroxyprogesterone Acetate Injection on Menstrual Changes And Uterine Artery Doppler Indices: A RCT
RezkRCT2018b	Gynecol Endocrinol 2018;34:298-300.	Rezk M, Shaheen AE, Saif El-Nasr I	Clomiphene citrate combined with metformin versus letrozole for induction of ovulation in clomiphene-resistant polycystic ovary syndrome: a randomized clinical trial
Kandil2018	J Minim Invasive Gynec 2018;25:1075-79	Kandil M, Rezk M, Al-Halaby A, Emarh M, El-Nasr IS	Impact of Ultrasound-Guided Transvaginal Ovarian Needle Drilling Versus Laparoscopic Ovarian Drilling on Ovarian Reserve and Pregnancy Rate in PCOS: RCT
RezkRCT2019b	Int J Gynaecol Obstet 2019;145:18-22	Rezk M, Shaheen AE, El-Nasr IS	Effects of a levonorgestrel intrauterine system versus a copper intrauterine device on menstrual changes and uterine artery Doppler
Salama2019	Pregnancy Hypertension 2019;17: 54-58	Salama M, Rezk M, Gaber W, Hamza H, Marawan H, Gamal A, Abdallah S	Methyldopa versus nifedipine or no medication for treatment of chronic hypertension during pregnancy: a multicenter randomized clinical trial
RezkRCT2019a	Gynecol Endocrinol 35:3, 217-219	Rezk M, Hamza H, El-Shamy ES	Luteal support with vaginal dydrogesterone increases pregnancy rate in patients with clomifene resistant PCOS receiving letrozole for ovulation induction
RezkRCT2020	Hypert Pregnancy 2020;39:393-398	RezkM, EmarhM, MasoodA, Da- woodR, Shamy, GamalA, BadrH	Methyldopa versus nifedipine or no medication for treatment of chronic hypertension during pregnancy: A multicenter randomized clinical trial
Unpublished RCTs			
RezkRCT14_U1	PACTR201407000852144		The safety, acceptability and cost-effectiveness of planned vaginal birth after cesarean compared to repeated cesarean section
RezkRCT14_U2	PACTR201409000878356		Endometrial scratching in women with repeated first trimester pregnancy loss: A randomized controlled trial.
RezkRCT15_U1	PACTR201508001237608		Two regimens of medroxyprogesterone acetate for treatment of endometrial hyperplasia without atypia : a randomized clinical trial
RezkRCT16_U1	PACTR201610001801760		Comparison of Metformin and Glyburide alone or in combination for treatment of gestational diabetes mellitus: a randomized clinical trial.
RezkRCT16_U2	PACTR201610001803327		Bilateral uterine artery ligation and square sutures versus a novel combined suture for controlling bleeding in placenta previa centralis at CS: RCT
RezkRCT16_U3	PACTR201701001898417		Impact of Implanon versus Depot-medroxyprogesterone acetate injection on menstrual changes and uterine artery Doppler indices: a randomized clinical trial

RezkRCT17_U1	PACTR201702002020948	Maternal and fetal outcome with the use of Fentanyl versus Pethidine for pain relief during labour: a randomized clinical trial
RezkRCT17_U2	PACTR201702002021133	Analgesic and antiemetic effect of Intraperitoneal magnesium sulfate in laparoscopic salpingectomy: a randomized controlled trial
RezkRCT18_U1	PACTR201802003154375	A randomized clinical trial of sublingual versus rectal misoprostol for the prevention of postpartum hemorrhage in low resource settings
RezkRCT18_U2	PACTR201803003155333	A randomized clinical trial of immediate versus delayed insertion of levonorgestrel-releasing intrauterine system after surgical abortion

Table 2. Registration number, dates of recruitment, date registered, and date submission to journal for 17 RCTs by Dr. RezkRCT

Study	Registration	Date register[b]	Recruitment trial registr. (M=Y)		Recruitment paper (M=Y)		No women planned trial reg	No women randomised	No women analysed	N in /r
			Start[a]	End[a]	Start[a]	End[a]				
RezkRCT2014	Not registered	NR	NR	NR	Jan13	Jan14	NR	40 vs 40	40 vs 40	7
RezkRCT2015	Not registered	NR	NR	NR	Apr13	Apr14	NR	40 vs 40	40 vs 40	7
RezkRCT2015a	PACTR201405000757313	31-01-14	05-02-14	31-07-14	Feb14	Sept14	200	108 vs 106	100 vs 100	27
RezkRCT2015c	PACTR201411000930108	06-11-14	15-11-14	28-02-5	Nov14	Feb15	200	118 vs 118	100 vs 100	50
RezkRCT2015d	Not registered	NR	NR	NR	Mar12	Nov13	NR	30/30/30	30/30/30	4.
RezkRCT2015e	Not registered	NR	NR	NR	Feb14	Feb15	NR	112/116/114	100/100/100	25
RezkRCT2016	Not registered	NR	NR	NR	Jun12	Jun16	NR	54/54/54	50/50/50	3
HamzaRCT2016	PACTR201509001264171	12-09-15	20-09-15	12-04-16	NR	NR	150	72 vs 74	72 vs 74	22
RezkRCT2017	PACTR201610001803	03-10-16	14-10-16	16-10-17	NR	NR	100	57 vs 56	54 vs 52	9.
RezkRCT2018a	Not registered	NR	NR	NR	Dec16	Aug17	330	165 vs 165	152 vs 159	37
RezkRCT2019b	PACTR201701001900640	01-12-16	14-12-16	18-06-17	Dec16	Aug17	300	165 vs 165	152 vs 154	37
SalamaRCT2019	PACTR201707002464247	24-07-17	01-08-17	01-08-18	Aug17	Aug18	480	168/168/168	166/160/164	42
RezkRCT2020	PACTR201707002463243	24-07-17	01-08-17	01-08-18	Aug17	Aug18	480	165/165/165	164/160/162	42
4 RCTs on CC resistant women										
RezkRCT2015b	PACTR2014050007573	13-09-14	01-10-14	06-06-15	Oct14	July 15	108	54 vs 54	52 vs 53	21
[Note the above registration PACTR201405000757313 is for a trial titled “Nicorandil Versus Nifedipine in the treatment of Preterm Labour: A Randomized Clir investigator Rezk.] RezkRCT2015a However a search for “Rezk” on the Pan African Clinical trials Registry reveals this trial PACTR201411000886127, which a the correct registration. That trial was registered on 13/02/2017, i.e. retrospectively.										
RezkRCT2018b	PACTR201610001802302	03-10-16	14-10-16	08-05-17	Oct16	May17	200	105 vs 104	102 vs 100	25
KandilRCT2018	PACTR201702002035137 (not in the paper)	13-02-17	18-02-17	01-08-17	Feb17	Oct17	240	125 vs 125	124 vs 122	31
RezkRCT2019a	Not registered	NR	NR	NR	Jan16	Dec17	NR	100 vs 100	92 vs 94	8
Unpublished RCTs						Status				
RezkRCT14_U1	PACTR201407000852144	13-07-14	01-08-14	25-12-14	completed		200	220		44
RezkRCT14_U2	PACTR201409000878356	29-08-14	01-09-14	22-08-15	completed		120	120		10
RezkRCT15_U1	PACTR201508001237608	12-08-15	22-08-15	01-03-16	completed		100	100		16
RezkRCT16_U1	PACTR201610001801760	03-10-16	14-10-16	06-05-17	completed		120	120		17
RezkRCT16_U2	PACTR201610001803327	03-10-16	14-10-16	08-05-17	completed		100	100		16
RezkRCT16_U3	PACTR201701001898417	01-12-16	14-12-16	18-08-17	completed		320	300		38

RezkRCT17_U1	PACTR201702002020948	06-02-17	13-02-17	17-04-17	completed	300	300	15
RezkRCT17_U2	PACTR201702002021133	06-02-17	13-02-17	06-04-17	completed	200	200	1(
RezkRCT18_U1	PACTR201802003154375	27-02-18	31-03-18	21-10-18[e]	completed	600	600[e]	75
RezkRCT18_U2	PACTR201803003155333	27-02-18	21-03-18	21-10-18[e]	completed	240	240[e]	3(

NA = not applicable;
[a] As described in the paper;
[b] Calculated from the recruitment start and end date;
[c] Calculated by dividing the number of women analysed with the number of months.

[d]Date accepted as date submitted is not provided

[e] Anticipated date and number

Table 3 - Textual and other comparisons between SalamaRCT2019 and RezkRCT2020

Study	1	2
First author	Salama	Rezk
Year of publication	2019	2020
No. of authors	7	7
Names of co-authors	*M. Rezk,* W. Gaber, H. Hamza, H. Marawan, *A. Gamal,* S. Abdallah	M. Emarh, A. Masood ,R. Dawood , E. El-Shamy , *A. Gamal* & H. Badr
Journal	Pregnancy Hypertension	Hypertension in Pregnancy
Publisher	Elsevier	Taylor & Francis
Title	Methyldopa versus nifedipine or no medication for treatment of chronic hypertension during pregnancy: a multicenter randomized clinical trial	Methyldopa versus labetalol or no medication for treatment of mild and moderate chronic hypertension during pregnancy: a randomized clinical trial
No. of arms	3	3
Interventions	Methyl dopa tablets 1–2 gm p day (Aldomet, 250 mg tabl. Kahira Pharma. & chem. Ind. co Egypt)	Methyl dopa tablets 1–2 gm p day (Aldomet, 250 mg tabl. Kahira Pharma. & chem. Ind. co Egypt)
	Nifedipine tablets 20–40 mg (Epilat retard 20 mg tablets, EIPICO pharmaceuticals, Egypt).	Labetalol tablets 100–300 mg per day in divided doses for blood pressure control. (Labipress, 100 mg tablet, DBK Pharmaceutical company, Egypt).
Control	placebo tablets (vitamin-C tablets). (Cevarol tablet 500 mg, Memphis pharmaceuticals, Egypt).	placebo tablets (vitamin-C tablets). (Cevarol tablet 500 mg, Memphis pharmaceuticals, Egypt).
Participants	Pregnant women diagnosed with mild to moderate chronic hypertension without medication and without end-organ affection, with systolic blood pressure of 140–159 mmHg or diastolic blood pressure of 90–109 mmHg, at the beginning of pregnancy (between 6 and 10 weeks)	Pregnant women diagnosed with mild to moderate chronic hypertension without medication and without features of end organ affection as renal or hepatic impairment, fundal changes; with systolic blood pressure of 140–159 mmHg or diastolic blood pressure of 90–109 mmHg, at the beginning of pregnancy (between 6 and 10 weeks)
Endpoint	severe hypertension (trial registration “maternal outcome” and ”fetal-neonatal outcome”)	severe hypertension (trial registration “maternal outcome” and ”fetal-neonatal outcome”)
No. of participants assessed eligibility	520	514
No. of participants randomised	504	495
Number of dropouts in each arm	2 / 8 / 4	1 / 5 / 3
No. of recruiting centres	2	2
Centers	Departments of Obstetrics and Gynecology at Menoufia University hospital, Shibin El-kom Teaching hospital and 11 Central hospitals at Menoufia governorate, Egypt	Departments of Obstetrics and Gynecology at Menoufia University hospital and Shibin El-kom Teaching hospital
Ethics	Ethical clearance letter number	Ethical clearance letter number 422 H/2017 on 17 July 2017 with similar approval obtained from the Ministry of Health

	426H/2017 on 17 July 2017 with similar approval obtained from the Ministry of Health (MOH letter number 1436)	(MOH letter number 1423)
Recruitment start date (publication)	August 2017	August 2017
Recruitment end date (in the publication)	August 2018 (last day of follow up of the last recruited participant)	August 2018 (last day of follow up of the last recruited participant)
Recruitment period in months	6 (+7 months follow until end of pregnancy)	6 (+7 months follow until end of pregnancy)
Randomisation per month	+/- 85 women	+/- 85 women
Registration	PACTR201707002464247	PACTR201707002463243
First registration date	24 July 2017	24 July 2017
Sample size in the registration	480	480
Author in trial registry	Dr. Mohamed Rezk 25 Yasin Abdelghafar street, Shibin Elkom, Egypt	Dr. Mohamed Rezk 25 Yasin Abdelghafar street, Shibin Elkom, Egypt
Journal dates	Received 11 February 2019 Accepted 8 May 2019	Received 4 July 2019 Accepted 30 June 2020
Time between start study and submission	18 months	23 months
Outcomes with exactly the same numbers between the trials	Number of women with past history of adverse obstetrical outcome 50 vs 49 vs 51 Delivery before 37 weeks 30 vs 42 vs 50 Placental abruption 10 vs 12 vs 38 Venous thromboembolism 4 vs 4 vs 6 Intra-uterine fetal demise 4 vs 4 vs 6	Number of women with past history of adverse obstetrical outcome 52 vs 48 vs 55 Delivery before 37 weeks 30 vs 42 vs 50 Placental abruption 10 vs 12 vs 38 Venous thromboembolism 4 vs 4 vs 6 Intra-uterine fetal demise 4 vs 4 vs 6

Table 4. Reference, dates of recruitment, date registered, and submission to journal for cohort studies by Rezk

Study	Journal	Authors	Title	Recruitment paper (M=Y)		No women analysed	No. incl. /month	Article received[a]	Reception date compatibl with follov up
				Start[a]	End[a]				
Rezk2014a	Hypertens Pregnancy; 2015:34:137–44	Rezk M, Gamal A, Emara M	Maternal and fetal outcome in de novo preeclampsia in comparison to superimposed preeclampsia: a two-year observational study	June 2012	June 2014	164	14	2014	
Rezk2014b	Journal Obstetrics Gynaecology, 2015;35:663-6	Rezk M, Mara-wan H, Dawood R, Masood A, Abo-Elnasr M	Prevalence and risk factors of iron-deficiency anaemia among pregnant women in rural districts of Menoufia governorate, Egypt	Jan 2013	Dec 2013	2470	206	2014	
Rezk2014c	Middle East Fertility Society Journal, 2015; 20: 108-13	Rezk M, Shawky M	The safety and acceptability of saline infusion sonography versus hysterosalpingography for evaluation of tubal patency in infertile women.	Feb 2013	Feb 2014	104	9	06-05-14	
Rezk2014d	J of Obstetrics Gynaecology, 2015;35: 517-21	Rezk M, Masood A, Dawood R	Perimenopausal bleeding: Patterns, pathology, response to progestins and clinical outcome	March 2012	March 2014	400	17	11-11-14[d]	
Rezk2015a	Arch Gynecol Obstet. 2016;294:273-8	Rezk M, Gamal A	Maternal and fetal outcome in women with rheumatic heart disease: a 3-year observational study	May 2012	May 2015	192	5.3	30-05-15	No
Rezk2015b	J Mater Fetal Neonatal Med 2015;29:2834-8	Rezk M, Sayyed T, Abo-Elnasr M, Shawky, Badr H	Impact of maternal fasting on fetal well-being parameters and fetal–neonatal outcome: a case–control study	17 June 2015	16 July 2015	450	450	07-08-15	No
Rezk2015c	Hypertension in Pregnancy 2016;35:181–188	Rezk M, Abo-Elnasr M, Ha-laby A, Zahran A, Badr H	Maternal and fetal outcome in women with gestational hypertension in comparison to gestational proteinuria: A 3-year observational study	July 2012	July 2015	230	9.8	12-8-15	No
Rezk2015d	Middle East Fertility Society Journal, 2016; 21: 91-95	Rezk M, Emarh M, Alhalaby A	Anti-Müllerian hormone and luteinizing hormone for prediction of spontaneous ovulation after laparoscopic ovarian drilling in clomiphene-resistant polycystic ovary syndrome	Apr 2012	Apr 2015	113	3	28-08-15	
Rezk2015e	Clin Obstet Gynecol Reprod Med, 2015;1: 79-83	Rezk M, Abo-Elnasr M, Al-Halaby A	Combined use of intracervical foley catheter and vaginal misoprostol for termination of second trimester pregnancy: a three-year observational study	July 2012	July 2015	105 vs 104	5.8	20-09-15	
Rezk2015f	J Mater Fetal Neonatal Med 2017;30:2031-5	Rezk M, Ellakwa H, Al-Halaby A, Shaheen A, Za-hran A, Badr H	Predictors of poor obstetric outcome in women with systemic lupus erythematosus: a 10-year experience of a university hospital	June 2005	May 2015	450	3.8	20-12-15	
Rezk2016a	J Mater Fetal Neonatal Med	Rezk M, Dawood R, Badr H	Maternal and fetal outcome in women with antiphospholipid	Dec 2012	Dec 2015	162	4.5	16-01-16	No

	2016;29:4015-9		syndrome: a three-year observational study						
Rezk2016b	Gynecol Endocrinol. 2016 ;32:844-847	Rezk M, Sayyed T, Ellakwa H, Zahran A, Gamal A	Metabolic changes in overweight and obese women above 35 years using Ethinylestradiol/ drosperinone combined contraceptive pills: a 3-year case-control study	Dec 2012	Dec 2015	90 vs 112	5.6	01-02-16	
Kandeel 2016a	Int J Gynaecol Obstet. 2016;135:272-75	Kandeel M, Sa-nad Z, Ellakwa H, El Halaby A, Rezk M, Saif I	Management of postpartum hemorrhage with intrauterine balloon tamponade using a condom catheter in an Egyptian setting	May 2011	Sep 2012	151	9	09-02-16	
Rezk2016c	J Mater Fetal Neonatal Med 2017; 30:22, 2747-51	Rezk M, Saleh S, Shaheen A, Fakhry T	Uterine packing versus Foley's catheter for the treatment of postpartum hemorrhage secondary to bleeding tendency in low-resource setting: A four-year observational study	March 2012	March2016	92	1.9	04-03-16	
Rezk2016d	Pregnancy Hypertension: 2016;6: 291–294	Rezk M, Ellakwa H, Gamal A, Emara M	Maternal and fetal morbidity following discontinuation of antihypertensive drugs in mild to moderate chronic hypertension: A 4- year observational study	March 2012	March 2016	222	4.6	21-03-16	No
Kandil 2016b	Menoufia Med J 2017;30:350-5.	Kandil MA, Say-yed TM, El-Mallah E, Rezk MA, Zidan HM	Hyoscine butylbromide for shortening of the first stage of labor in primigravid women	2015	2016	55 vs 55	?	26-07-16	
Rezk2017a	ARC Journal of Gynecology and Obstetrics 2017 3, PP 13-20	Rezk M, El-Nasr IS	Bilateral Uterine Artery Ligation and Square Sutures versus a Novel Combined Suture for Controlling Bleeding from the Placental Bed in Placenta Previa Centralis at Cesarean Section: A Randomized Clinical Trial	Oct 2016	May 2017	54 vs 52	13.1	2017 [d]	
Rezk2017b	ARC Journal of Gynecology and Obstetric 2017;4: 11-16	Rezk M, Gaber W, Hamza H, Shawky M	Efficacy, Acceptability and Two-Year Continuation Rate of Intrauterine Contraceptive Device Following Surgical or Medical Termination of First Trimester Pregnancy	Sep 2012	Sep 2017	262 vs 286	9.1	2017 [d]	
ElSayed 2017	Menoufia Medical Journal 2018, 31:57–62	El Sayed M, El Kelani OA, Rezk MA, Solyman Attalah AE, Rawash MSA	Maternal serum dehydroepiandrosterone sulfate as a predictor of labor inhibition in preterm labor	Aug 2015	Oct 2016	43	3	22-01-17	
Rezk2017c	J Mater Fetal Neonatal Med, 2018; 31:1542-1547	Rezk M, Gamal A	Maternal hemodynamic changes and predictors of poor obstetric outcome in women with rheumatic heart disease: a five-year observational study	March 2012	March2017	224	3.7	02-03-17	No
Rezk2017d	Eur J of Contraception & Reproductive Health Care, 2017;22:316-20,	Rezk M, Al-Halaby A, Emarh M, Shawky M	Correlation between uterine artery Doppler indices and menstrual irregularities among levonorgestrel releasing intrauterine system and depot medroxyprogesterone	April 2013	April 2017	48	4.8	14-04-17	

			acetate users: a prospective observational study						
Rezk2017e	Eur J of Contraception & Reproductive Health Care, 2017;22:344-48	Rezk M, Sayyed T, Masood A, Dawood R.	Risk of bacterial vaginosis, Trichomonas vaginalis and Candida albicans infection among new users of combined hormonal contraception vs LNG-IUS.	May 2012	May 2017	452	7.5	15 May 2017	
Rezk2017f	J Mater Fetal Neonatal Med 2018: 31: 2436-40	Rezk M, Ma-sood A, Dawood R, Emara M; El-Sayed H	Improved pregnancy outcome following earlier splenectomy in women with immune thrombocytopenia: a 5-year observational study	May 2012	May 2017	160	13	18-05-17	No
Rezk2017g	Arch Gynecol Obstet 2017 296:1097–1102	Rezk M, Omar Z	Deleterious impact of maternal hepatitis-C viral infection on maternal and fetal outcome: a 5-year prospective study	May 2012	May 2017	342	5.7	29-05-17	No
Rezk2017h	Hypertension in Pregnancy 2018, 37; 111–117	Rezk M, Gaber W, Shaheen A, Nofal A, Emara M, Gamal A, Badr H	First versus second trimester mean platelet volume and uric acid for prediction of preeclampsia in women at moderate and low risk	Aug 2012	Aug 2017	9552	159	10-09-17	No
ElBadry 2017	Int J Occup Environ Med 2018;9:113-119	El-Badry A, Rezk M, El-Sayed H	Mercury-induced oxidative stress may adversely affect pregnancy outcome among dental staff: A cohort study	Jan 2016	Aug 2017	124	6	19-10-17	
Rezk2017i	Middle East Fertility Society Journal 2018; 23; 496–500	Rezk M, Elkelani O, Gaber W, Shawky M	Pre-insertion uterine artery Doppler indices may predict intrauterine contraceptive device-related heavy menstrual bleeding	Sep 2014	Sep 2017	332	9.2	22-10-17	
Rezk2017j	Global Journal of Reproductive Medicine 2018;3:	Rezk M, Al-Halaby H, Mohamed E, Wael G	Female Sexual Function and Perineal Pain Following Median versus Mediolateral Episiotomy in Primiparous Women: A Two-Year Follow up Study	Sep 2012	Sep 2017	428		09-12-17	
Kamal2017	Gynecol Endocrinol 2018;34:789-792	Kamal N, Sanad Z, Elkelani O, Rezk M, Shawky M, Sharaf AE	Changes in ovarian reserve and ovarian blood flow in patients with polycystic ovary syndrome following laparoscopic ovarian drilling	Aug 2014	Aug 2017	80	2	16-12-17	
Rezk2018	Gynecol Endocrinol 2019; 35, 217-19	Rezk M, Hamza H, El-Shamy E	Luteal support with vaginal dydrogesterone increases pregnancy rate in patients with clomifene resistant polycystic ovary syndrome receiving letrozole for ovulation induction	Jan 2016	Dec 2017	92 vs 94	7.8	19-02-18	
Reda2018	Menoufia Medical Journal 2020; 33:830–34	Reda A, Gamal A, Rezk M, Gamal G, Idris O, Sharaf M	Pattern of lipid profile in pregnancy and its impact on the gestational course	Jun 2016	Jun 2018	94	3.9	17-10-18	No
Abdel-hamid2019	Menoufia Medical Journal 2020; 33:469-73	Abdelhamid A, Elsheikhah A, Halabya AEF, Rezk	Accuracy of two-dimensional ultrasound versus three-dimensional power	Apr 2017	Apr 2019	110	4.6	24-04-19	No

		M, Zahran RA	Doppler for diagnosis of placenta accrete					
Shabana 2018	Menoufia Medical Journal 2018, 31:57–62	Shabana A, Rezk M, Ibrahim D, Abd-Elhamid S, Salah M	Uterine artery Doppler indices may predict significant causes of perimenopausal bleeding	Nov 2017	Jun 2018	104	13	03-11-18
ElBadry 2019	Gavin publisher	El-Badry A, Rezk M, Masoud E	Menstrual Irregularities, Urogenital Symptoms and Hormonal Changes Among Nurses of the Delivery Rooms in Menoufia Governorate, Egypt	Mar 2018	Dec 2018	310	31	07-02-19
Hamza 2021	J Mater Fetal Neonatal Med 2021 Apr 11:1-5.	Hamza H, Rezk M, Tharwat A, Amgad M, Dawood R	Impact of manual removal of the placenta and intrauterine cleaning during elective cesarean delivery on maternal infectious morbidity and blood loss	Jan 2020	Aug 2020	110/106/108/112	55	02-10-20

NA = not applicable;
[a] As described in the paper; [d]Date accepted as date submitted is not provided

Table 5. Summary table showing the numbers of even numbered categorical variables in the baseline and result tables of papers authored by Mohammed Rezk of Menoufia university. Final column shows the nominal probability that the observed number, or greater, of evens occurred by chance.

Probabilities from the “coin flip probability calculator” available here. https://www.omnicalculator.com/statistics

Overall, with 925 even numbers and 92 odd numbers, the probability that this has happened by chance is $p = 2.12^{e-150}$

Publication Reference	Table number	Number of categorical variables	Number of even values	P Observed number or greater
Mohamed Rezk, et al (2017) Predictors of poor obstetric outcome in women with systemic lupus erythematosus: a 10-year experience of a university hospital, **The Journal of Maternal-Fetal & Neonatal Medicine**, 30:17, 2031-2035, DOI: 10.1080/14767058.2016.1236244	1	10	8	0.05469
	2	48	41	0.000000312
	3	20	14	0.05766
	4	10	6	0.37695
Mohamed Rezk, et al (2017) Uterine packing versus Foley's catheter for the treatment of postpartum hemorrhage secondary to bleeding tendency in low-resource setting: A four-year observational study, **The Journal of Maternal-Fetal & Neonatal Medicine**, 30:22, 2747-2751, DOI: 10.1080/14767058.2016.1262342	1	6	2	0.8906
	2	7	3	0.7734
	3	20	15	0.020695
Rezk M, et al. Maternal and fetal morbidity following discontinuation of antihypertensive drugs in mild to moderate chronic hypertension: A 4-year observational study. Pregnancy Hypertens. 2016 Oct;6(4):291-294. doi: 10.1016/j.preghy.2016.05.002. Epub 2016 May 20. PMID: 27939471.	1	nil		
	2	48	43	0.00000000684
	3	30	24	0.0007155
Mohamed Rezk, et al. Efficacy, Acceptability and Two-Year Continuation Rate of Intrauterine Contraceptive Device Following Surgical or Medical Termination of First Trimester Pregnancy ARC Journal of Gynecology and Obstetrics Volume 2, Issue 4, 2017, PP 11-16 ISSN 2456-0561 DOI: http://dx.doi.org/10.20431/2456-0561.0204003	1	8	8	0.003906
	2	42	35	0.000007549
	3	32	25	0.0010512
Mohamed Rezk, et al (2018) Maternal hemodynamic changes and predictors of poor obstetric outcome in women with rheumatic heart disease: a five-year observational study, The **Journal of Maternal-Fetal & Neonatal Medicine**, 31:12, 1542-1547, DOI: 10.1080/14767058.2017.1319932	1	nil		
	2	26	24	0.000005245
	3	nil		
	4	40	39	0.00000000003729
	5	10	10	0.0009766
Mohamed Rezk, et al. (2017) Correlation between uterine artery Doppler indices and menstrual irregularities among levonorgestrel releasing intrauterine system and depot medroxyprogesterone acetate users: a prospective observational study, The **European Journal of Contraception & Reproductive Health Care**, 22:4, 316-320, DOI: 10.1080/13625187.2017.1351533	1	nil		
	2	nil		
	3	nil		
	4	28	27	0.00000010803
Mohamed Rezk, et al (2017) Risk of bacterial vaginosis, Trichomonas vaginalis and Candida albicans infection among new users of combined hormonal contraception vs LNG-IUS, The **European Journal of Contraception & Reproductive Health Care**, 22:5, 344-348, DOI: 10.1080/13625187.2017.1365835	1	16	16	0.00001526
	2	24	24	0.0000000596
	3	24	24	0.0000000596
	4	nil		
Mohamed Rezk, et al (2018) Improved pregnancy outcome following earlier splenectomy in women with immune thrombocytopenia: a 5-year observational study, The **Journal of Maternal-Fetal & Neonatal Medicine,** 31:18, 2436-2440, DOI: 10.1080/14767058.2017.1344636	1	nil		
	2	26	25	0.0000004023
	3	14	13	0.0009155

Rezk M, Omar Z. Deleterious impact of maternal hepatitis-C viral infection on maternal and fetal outcome: a 5-year prospective study. Arch Gynecol Obstet. 2017 Dec;296(6):1097-1102. doi: 10.1007/s00404-017-4550-2. Epub 2017 Sep 27. PMID: 28956137.	1	47	47	0.000000000000007
	2	38	32	0.000012171
	3	24	23	0.00000149
	4	nil		
Mohamed Rezk, et al (2018) First versus second trimester mean platelet volume and uric acid for prediction of preeclampsia in women at moderate and low risk, Hypertension in Pregnancy, 37:3, 111-117, DOI: 10.1080/10641955.2018.1483508	1	4	4	0.0625
	2	18	18	0.000003815
	3	nil		
	4	nil		
	5	12	12	0.00024414
Mohamed R[ezk], Alaa A-H, Mohamed E, Wael G. Female Sexual Function and Perineal Pain Following Median versus Mediolateral Episiotomy in Primiparous Women: A Two-Year Follow up Study. Glob J Reprod Med. 2018; 3(2): 555610. DOI: 10.19080/GJORM.2018.03.555610	1	28	28	0.000000003725
	2	nil		
	3	24	24	0.0000000596
	4	8	8	0.003906
Mohamed Rezk, Haitham Hamza & El-Sayed El-Shamy (2019) Luteal support with vaginal dydrogesterone increases pregnancy rate in patients with clomifene resistant polycystic ovary syndrome receiving letrozole for ovulation induction, **Gynecological Endocrinology**, 35:3, 217-219, DOI: 10.1080/09513590.2018.1512571	1	4	4	0.0625
	2	14	10	0.08978
Mohamed Rezk, et al (2018) Clomiphene citrate combined with metformin versus letrozole for induction of ovulation in clomiphene-resistant polycystic ovary syndrome: a randomized clinical trial, **Gynecological Endocrinology**, 34:4, 298-300, DOI: 10.1080/09513590.2017.1395838	1	4	4	0.0625
	2	26	23	0.00004399
Rezk M, Ellakwa H, Gamal A, Emara M. Maternal and fetal morbidity following discontinuation of antihypertensive drugs in mild to moderate chronic hypertension: A 4-year observational study. Pregnancy Hypertens. 2016 Oct;6(4):291-294. doi: 10.1016/j.preghy.2016.05.002. Epub 2016 May 20. PMID: 27939471.	1	nil		
	2	46	43	0.0000000002311
	3	30	25	0.00016246
Rezk M, Dawood R, Abo-Elnasr M, Al Halaby A, Marawan H. Lactoferrin versus ferrous sulphate for the treatment of iron deficiency anemia during pregnancy: a randomized clinical trial. **J Matern Fetal Neonatal Med**. 2016;29(9):1387-90. doi: 10.3109/14767058.2015.1049149. Epub 2015 Jun 3. PMID: 26037728.	1	nil		
	2	nil		
	3	12	12	0.00024414
	4	10	7	0.17188
Rezk M, Elkelani O, Hamza H, Shawky M, et al. (2018). Impact of Etonogestrel Subdermal Implant Versus Depot-Medroxyprogesterone Acetate Injection on Menstrual Changes And Uterine Artery Doppler Indices: A Randomized Clinical Trial. M J Gyne. 3(1): 14.	1	nil		
	2	nil		
	3	nil		
	4	nil		
	5	34	31	0.000000383
Mohamed Rezk , Mohamed Emarh , Alaa Masood , Ragab Dawood , Elsayed El-Shamy , Awni Gamal & Hassan Badr (2020): Methyldopa versus labetalol or no medication for treatment of mild and moderate chronic hypertension during pregnancy: a randomized clinical trial, Hypertension in Pregnancy, DOI: 10.1080/10641955.2020.1791902	1	16	15	0.0002594
	2	30	30	0.0000000009313

	3	24	24	0.0000000596
Salama M, Rezk M, Gaber W, Hamza H, Marawan H, Gamal A, Abdallah S. Methyldopa versus nifedipine or no medication for treatment of chronic hypertension during pregnancy: A multicenter randomized clinical trial. Pregnancy Hypertens. 2019 Jul;17:54-58. doi: 10.1016/j.preghy.2019.05.009. Epub 2019 May 9. PMID: 31487657.	1	24	24	0.0000000596
	2	30	30	0.0000000009313
	3	21	21	0.0000004768

Figures

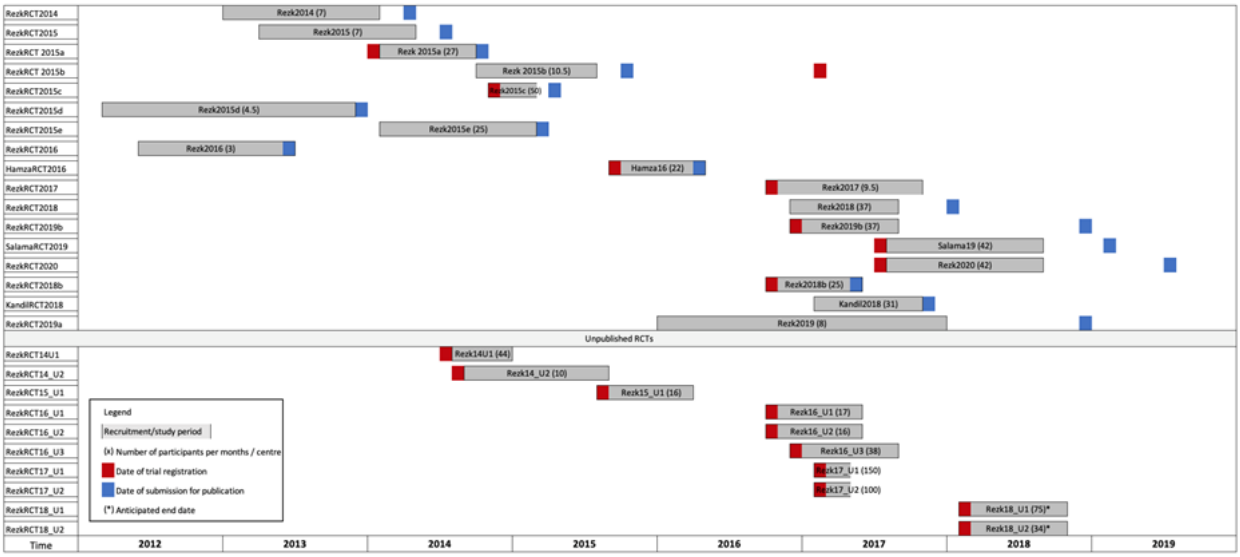

Figure 1

Overview of the published and unpublished RCTs of Dr. Rezk. Grey beams indicate the recruitment period. Between brackets is the mean inclusion rate per month seen. Red squares refer to the moment of trial registration. Blue squares refer to the moment of submission.

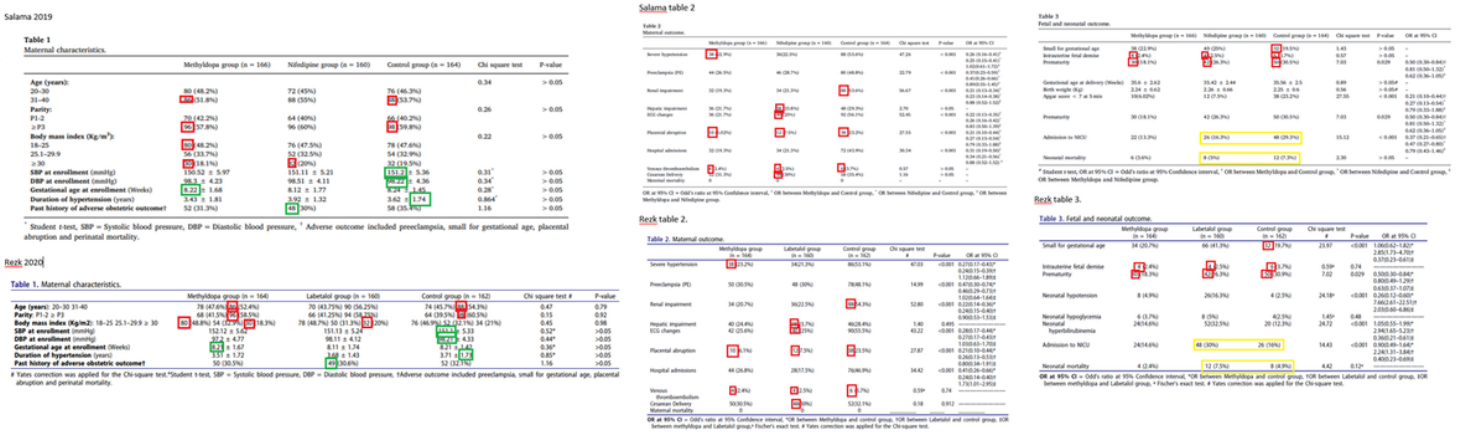

Figure 2

a-c: Comparison of tables in Salama2019 Pregnancy Hypertension 2019;17: 54-58 and Rezk2020 Hypertens Pregnancy 2020;39:393-398.

Figure 2a: Comparison of baseline tables. Red squares indicated identical values (7) while green squares indicate values (9) within 0.01 or .1 of each other

Figure 2b: Comparison of maternal outcomes with 10 out of 27 identical values (red squares).

Figure 2c: Comparison of fetal and neonatal outcomes, indicating 7/32 identical values. The values for “Admission to NICU” and “neonatal mortality” for the “nifedipine” and “control” columns in Salama, and for the “labetolol” and “control” columns in Rezk appear to have been transposed.

Table 1. Maternal characteristics

	Lactoferrin group (n=100)	Sulphate group (n=100)	Fumerate group (n=100)	ANOVA test	P-value
Age	25.56±5.76	26.30±5.81	24.90±5.65	0.021	>0.05
Parity	1.52 1.33	1.46±1.39	1.50±1.29	0.008	>0.05
G.A. at inclusion	16.14±1.85	15.80±1.82	16.10±1.82	0.16	>0.05
BMI at inclusion	20.86 1.97	21.00 1.90	21.50±1.70	0.175	>0.05
No of ANC visits	1.31±1.69	1.20 1.08	1.29±1.76	0.019	>0.05

G.A.=Gestational age, BMI=Body mass index, ANC=Antenatal care

Table 1. Maternal characteristics.

	Group 1 (Lactoferrin group)	Group 2 (Ferrous group)	*t*-test	*p* value
Age	26.4 ± 5.18	26.5 ± 5.63	0.130	>0.05*
Parity	1.42 ± 1.37	1.50 ± 1.29	0.43	>0.05
GA at inclusion	16.32 ± 1.76	16.01 ± 1.82	1.22	>0.05
BMI at inclusion	21.86 ± 1.94	21.90 ± 1.90	0.15	>0.05
No of ANC visits	1.03 ± 1.14	1.25 ± 1.08	1.40†	>0.05

GA = gestational age, BMI = body mass index, ANC = antenatal care.
*Non-significant.
†Mann–Whitney test.

Table 2. Changes in hemoglobin (Hb) concentration after treatment

	Lactoferrin group (n=100)	Sulphate group (n=100)	Fumerate group (n=100)	ANOVA test	P-value	Scheffe test
Hb at enrollement	8.03 0.70	8.15±0.58	8.03±0.70	1.08	>0.05	-------
Hb after 1 month	8.65 0.71	9.33±0.37	8.65±0.71	39.35	<0.001	P1<0.001 P2>0.05 P3<0.001
Hb after 2 months	10.41±0.33	9.41±0.35	9.14±0.63	174.37	<0.001	P1<0.001 P2>0.05 P3<0.001
Total increase in Hb	2.28 0.56	1.16 0.42	1.21±0.22	357.53	<0.001	P1<0.001 P2>0.05 P3<0.001

Table 2. Maternal hemoglobin (Hb) concentration (gm/dL) and outcome of therapy.

	Group 1 (Lactoferrin group)	Group 2 (Ferrous group)	*t*-test	*p* value
Hb at enrolment	8.15 ± 0.58	8.03 ± 0.702	1.31	>0.05
Hb after 1 month	9.33 ± 0.37	8.65 ± 0.718	8.37	<0.001*
Hb after 2 months	10.41 ± 0.33	9.14 ± 0.637	17.63	<0.001
Total increase in Hb	2.26 ± 0.51	1.11 ± 0.22	20.31	<0.001

*Highly significant.

Table 3. Adverse effects of treatment

	Lactoferrin group (n=100)	Sulphate group (n=100)	Fumerate group (n=100)	Chi square	P-value
Gastric upset	10	63	60	64.42	<0.001
Abdominal pain	20	65	60	38.38	<0.001
Constipation	17	55	60	38.38	<0.001
Dark stools	0	35	30	42.22	<0.001
Vomiting	7	40	30	23.86	<0.001

Table 3. Adverse effects and patient compliance to iron therapy.

	Group 1 (Lactoferrin group)	Group 2 (Ferrous group)	Chi square	*p* value
Gastric upset	10	60	54.94	<0.001*
Abdominal pain	20	61	33.33	<0.001
Vomiting	10	30	12.50	<0.001
Constipation	20	60	33.33	<0.001
Dark stools	0	30	35.29	<0.001
Want to stop intake	0	20	22.22	<0.001

*Highly significant.

Figure 3

a-c: Comparison of Rezk2015e (Oral lactoferrin versus ferrous sulphate and ferrous fumerate for the treatment of iron deficiency anemia during pregnancy Journal of Advanced Nutrition and Human Metabolism 2015;2:740) with Rezk2015c (Lactoferrin versus ferrous sulphate for the treatment of iron deficiency anemia during pregnancy: a randomized clinical trial. J Matern Fetal Neonatal Med 2016;29:1387-90).

Figure 3a: Comparison of baseline tables. Red squares indicated identical values (6) while green squares indicate values (8) within that differ slightly.

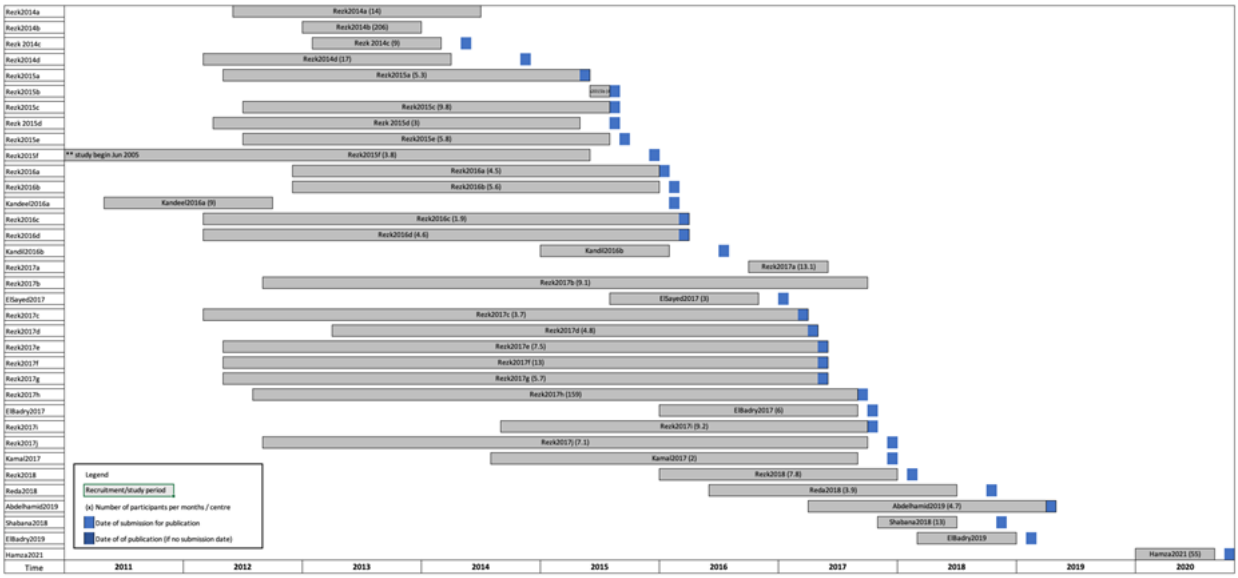

Figure 4

Overview of the cohort studies of Dr. Rezk. Between brackets is the mean inclusion rate per month.

Rezk 2016 a

Table 1. Maternal characteristics.

	Gestational hypertension (n = 106)	Gestational proteinuria (n = 124)	Student t-test	p-Value
Age (in years)	22.73 ± 1.41	22.34 ± 1.76	1.83	>0.05
Parity	1.64 ± 1.12	1.33 ± 1.51	1.71*	>0.05
Previous miscarriage	24 (22.6%)	32 (25.8%)	0.41**	>0.05
First-degree relative with hypertension	38 (35.8%)	12 (9.7%)	4.62**	<0.001
Body mass index	21.11 ± 1.23	23.27 ± 1.44	12.12	<0.001
Gestational age at diagnosis (in weeks)	24.1 ± 2.31	23.9 ± 2.33	0.65	>0.05
Gestational age at delivery (in weeks)	34.22 ± 3.82	34.68 ± 3.58	0.94	>0.05

*Mann Whitney test, **Chi-square test.

Rezk 2016b

Table 1
Maternal characteristics.

	Treatment group (n = 104)	Non-treatment group (n = 118)	Student t-test	P-value
Age (in years)	29.73 ± 1.41	29.34 ± 1.76	1.81	>0.05
Parity	2.64 ± 1.12	2.33 ± 1.51	1.72[a]	>0.05
Body mass index	25.11 ± 1.23	25.27 ± 1.12	1.01	
Gestational age at inclusion (in weeks)	9.1 ± 2.31	8.9 ± 2.33	0.64	>0.05
Blood pressure at inclusion	141.2 ± 8.33	146.3 ± 9.42	4.25	<0.001
Gestational age at delivery (in weeks)	35.22 ± 1.82	32.3 ± 2.31	100.1	<0.001
Blood pressure at delivery	138.6 ± 7.4	148.8 ± 11.72	7.63	<0.001

[a] Mann Whitney test.

Figure 5

Rezk2016a and Rezk2016b.

Maternal and fetal outcome in women with gestational hypertension in comparison to gestational proteinuria: A 3-year observational study

Bottom - Maternal and fetal morbidity following discontinuation of antihypertensive drugs in mild to moderate chronic hypertension: A 4-year observational study

Although each cohort has different recruitment criteria and periods, comparison of the baseline tables in each paper reveals that of the five baseline variables with mean and SD reported in both studies (20 data items in total) eight are identical Green, and seven differ by only one digit red. Three t test values also differ by only one digit .

Rezk 2015a Rheumatic heart disease 3 year

Table 1 Maternal characteristics

	Group 1 NYHA I&II (n = 112)	Group 2 NYHA III&IV (n = 80)	Student t test	P value
Age (in years)	24 ± 3.6	23 ± 3.2	1.99	<0.05
Parity	2.36 ± 1.1	0.75 ± 0.54	U = 12.09	<0.001
BMI	21 ± 1.2	21 ± 1.3	0.36	>0.05
G.A. at booking	13 ± 3.2	8 ± 2.2	12.08	<0.001
Number of ANC visits	6 ± 1.8	10 ± 2.3	13.51	<0.001
Late booking (after 12 weeks)	68 (60.7 %)	18 (22.5 %)	5.1*	<0.001

* Chi-square, *U* Mann–Whitney test, *BMI* body mass index, *G.A.* gestational age, *ANC* antenatal care

Rezk2017c Rheumatic heart disease 5 year

Table 1. Maternal characteristics.

	Successful pregnancy group (n = 126)	Poor obstetric outcome group (n = 78)	Student t-test	p-value
Age (in years)	26 ± 2.3	28 ± 3.1	5.27	<.001
Parity	2.2 ± 1.3	1.2 ± 0.2	U = 6.24	<.001
BMI	24.2 ± 2.7	28.3 ± 3.6	9.26	<.001
GA at booking	6.1 ± 1.9	10.2 ± 2.2	14.09	<.001
Number of ANC visits	8.2 ± 3.7	5.1 ± 1.8	6.91	<.001

U: Mann–Whitney test; BMI: body mass index; GA: gestational age; ANC: antenatal care.

Figure 6

Comparison of baseline characteristics of Rezk2017c (Maternal hemodynamic changes and predictors of poor obstetric outcome in women with rheumatic heart disease: a five-year observational study J Mater Fetal Neonatal Med, 2018; 31:1542-1547) and Rezk 2015a (Maternal and fetal outcome in women with rheumatic heart disease: a 3-year observational study; Arch Gynecol Obstet. 2016;294:273-8). Note the differences in mean BMI (21 +- 1.2 and 21 +- 1.3 in Rek2015a versus 24.1 +- 2.7 and 28.3 +-3.6 in Rezk2017c.

Rezk 2015b

Table 1. Preoperative patients' characteristics.

	ULOD group ($n = 52$)	BLOD group ($n = 53$)	Student's t-test	p Value	Difference (95% CI)
Age (in years)	29.7 ± 1.5	29.8 ± 1.4	0.38	0.72	−0.46 to −0.66
19–24	8	9			
25–29	32	33			
≥30	12	11			
Body mass index	23.9 ± 2.1	24.4 ± 1.8	1.31	0.19	−0.26 to −1.26
Duration of infertility (in years)	3.4 ± 0.7	3.2 ± 0.5	1.69	0.09	−0.04 to −0.44
AMH (ng/ml)	8.6 ± 2.3	8.7 ± 2.4	0.22	0.82	−0.81 to −1.01
AFC	19.1 ± 5.4	18.9 ± 5.5	0.19	0.85	−1.91 to −2.31
Serum FSH (IU/L)	5.3 ± 1.4	5.5 ± 1.2	0.79	0.43	−0.3 to −0.7
Serum LH (IU/L)	12.7 ± 4.2	12.8 ± 4.3	0.12	0.9	−1.55 to −1.75
Free androgen index (FAI)	8.2 ± 3.2	8.4 ± 3.1	0.33*	0.74	−1.02 to −1.42
Volume of the right ovary (cm^3)	12.2 ± 2.4	12.1 ± 2.5	0.21	0.83	−0.85 to −1.05
Volume of the left ovary (cm^3)	11.9 ± 1.8	11.8 ± 1.9	0.28	0.78	−0.62 to −0.82

*Mann–Whitney U test, 95% CI, confidence interval; AMH, anti-Mullerian hormone; AFC, antral follicle count; FSH, follicle-stimulating hormone; LH, leutinizing hormone.

Rezk2018b

Table 1. Patients characteristics.

	Clomiphene and Metformin group ($n = 102$)	Letrozole group ($n = 100$)	Student's t-test	p-value
Age (years)	24.6 ± 2.1	24.2 ± 2.8	1.15	>.05
Body mass index (kg/m^2)	24.2 ± 4.3	23.7 ± 4.8	0.78	>.05
20–25	44	46	0.07	>.05
>25	58	54		
Duration of infertility (months)	28.2 ± 6.9	27.8 ± 7.1	0.41	>.05
Basal hormones				
FSH (IU/L)	5.3 ± 1.4	5.5 ± 1.2	1.09	>.05
LH (IU/L)	12.7 ± 4.2	12.8 ± 4.3	0.17	>.05

FSH: Follicle stimulating hormone; LH: Leutinizing hormone.

Rezk2018b versus Rezk2019

Table 1. Patients characteristics.

	Clomiphene and Metformin group ($n = 102$)	Letrozole group ($n = 100$)	Student's t-test	p-value
Age (years)	24.6 ± 2.1	24.2 ± 2.8	1.15	>.05
Body mass index (kg/m^2)	24.2 ± 4.3	23.7 ± 4.8	0.78	>.05
20–25	44	46	0.07	>.05
>25	58	54		
Duration of infertility (months)	28.2 ± 6.9	27.8 ± 7.1	0.41	>.05
Basal hormones				
FSH (IU/L)	5.3 ± 1.4	5.5 ± 1.2	1.09	>.05
LH (IU/L)	12.7 ± 4.2	12.8 ± 4.3	0.17	>.05

FSH: Follicle stimulating hormone; LH: Leutinizing hormone.

Table 1. Patients characteristics.

	Letrozole alone ($n = 92$)	Letrozole and dydrogesterone ($n = 94$)	Student's t-test	p-Value
Age (years)	23.6 ± 3.1	23.3 ± 3.6	0.63	>.05
Duration of infertility (months)	26.9 ± 4.3	27.2 ± 4.1	0.49	>.05
Body mass index (kg/m^2):	24.1 ± 4.9	24.8 ± 4.1	1.06	>.05
<25	42	46		
≥25	50	48	0.09*	>.05
Basal hormones:				
FSH (IU/L)	5.2 ± 1.4	5.5 ± 2.1	0.93	>.05
LH (IU/L)	12.7 ± 4.3	11.3 ± 4.8	0.6	>.05

*Chi-square test; FSH: follicle stimulating hormone; LH: leutinizing hormone.

Figure 7

Comparison of baselinecharacteristics in Rezk 2015b (Impact of unilateral versus bilateral laparoscopic ovarian drilling on ovarian reserve and pregnancy rate: a randomized clinical trial. Gynecol Endocrinol 2016;32:399-402) and Rezk2018b (Clomiphene citrate combined with metformin versus letrozole for induction of ovulation in clomiphene-resistant polycystic ovary syndrome: a randomized clinical trial Gynecol Endocrinol 2018;34:298-300). The basal FSH and LH levels in Rezk2019 also contain one identical value (red box), one value with transposed digits (yellow box) and five values with a single digit different (green box) from the shared values in Rezk2015b and Rezk2018b.