

## Incidence of Post-Placental IUD Expulsion in Women of Childbearing Age

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### ABSTRACT

**Background:**The United States Medical Eligibility Criteria for Contraceptive Use and the American College of Obstetricians and Gynecologists recommend insertion of an Intra Uterine Device (IUD) immediately after delivery, due to the low complication rate. Postplacental IUD insertion is the insertion of an IUD immediately after delivery of the placenta during vaginal delivery. This method serves to reduce the number of births. However, post-placental insertion is believed to have a high expulsion rate. which is around 2-27%

**Purpose :** To analyze and summarize the results of one study with another regarding the incidence of postplacental IUD expulsion in women of childbearing age

**Method:**The research method used is literature review by searching for articles related to the theme taken from several search engines namely Pubmed, and Google Scholar and Search is done using the keyword IUD expulsion, Postplacental, women of childbearing age.

**Results:** the installation of post placental IUDs has the opportunity to experience an expulsion event

**Conclusion:** From all the journals that have been reviewed It can be concluded that the installation of post placental IUD has the opportunity to experience an expulsion event.

### 1. Introduction

Indonesia has a population of 258 million people with a population growth rate of 1.49% [1]. The large population and the high rate of population growth are a problem for Indonesia. Efforts to suppress the rate of population growth is the 2 KB program [1]. Family planning programs that are not implemented properly are one of the causes of the high rate of population growth [2]. Many acceptors who take part in the family planning program, but 3 fail during the program [3]. Studies on the use of postpartum contraception among women in Indonesia are still limited. However, based on the results of BKKBN monitoring of postnatal and post-abortion family planning services [4]. In December 2013 it was noted that the results of the service for New Contraceptive Participant Postpartum/Post Miscarriage were as many as 86,455 out of 681,175 new KB participants with details as many as 12,239 IUD (Intra Uterine Device) participants (14.16%), 2,774 MOW participants (3.21%), 34 MOP participants (0.04%), 2,476 Condom participants (2.86%), 8109 Implant participants (9.38%), 44,342 Injection participants (51.29%), and 16,481 Pills participants (19.06 %) [5]. So from the data above it can be concluded that the mother's motivation in using the postpartum IUD is still far lower when compared to the use of injectable and pill contraception [6]. In the postpartum period, intention and awareness to use postpartum contraceptive methods and implementation of postpartum contraceptive use [7]. The desire to have no more children or to delay the next pregnancy at least one year in the future causes 96% of mothers to be interested in using a contraceptive method even though they are not sure about using the contraceptive method [7].

Postplacental IUD insertion is the insertion of an IUD immediately after delivery of the placenta during vaginal delivery [9]. This method serves to reduce the number of births. However, post-placental insertion is believed to have a high expulsion rate. Which is around 2-27% [10]. IUD expulsion is one of the side effects of IUD insertion. The cumulative expulsion rate for 3 years is 10%. This figure is higher in those aged (+/-) 25 years [10]. The quality, configuration, stiffness, size and shape of the IUD are factors that influence the incidence of expulsion. In addition, IUDs that

match the configuration of the uterine cavity have a low incidence of expulsion [11]. The expulsion rate of the IUD is increased when it is used immediately postpartum compared to the postpartum visit. The expulsion rate of the IUD with vaginal insertion is 14.8%, while the insertion of intra-cesarean section is 3.8% [12].10 Incidence of expulsion of the IUD from the uterus often occurs during the first 1 month of use, so it is recommended follow-up IUD position in the first 1 month [5].

Installation of the IUD after postpartum (post-placental) can be done early, that is, it is installed in women who give birth before being discharged or 10 minutes after the placenta is born (post-placental) [13]. Based on the above background, the authors are interested in studying further about the incidence of post-placental IUD expulsion in women of childbearing age.

## 2. Materials and Method

The method used is literature review. In the first stage, it begins by searching for articles using PubMed and Google Scholar. The keywords used in the search for articles *are* expulsion, IUD, post-placental and women of childbearing age The articles obtained will be reviewed to obtain articles that meet the predetermined criteria. The inclusion criteria in the search for articles were chosen based on the year of publication, namely the range of 2017-2021 where the subject post partum mothers. The exclusion criteria at the time of the article search were selected according to the research variables, the variables were not compared with other variables. The search was carried out according to keywords and found articles that were close to 30 the selection of subsequent articles was carried out based on inclusion and exclusion criteria which finally resulted in 20 articles being reviewed.

The journals that have been found are then specified according to the inclusion criteria and exclusion criteria, namely IC1: journal published, IC2: journal published in 2017-2021, IC3: type of quantitative research, IC4: non-duplicate journal published on Google scholar. After conforming to IC1-IC4, only 15 articles remained. Then IC5 was selected based on the compatibility of article titles and abstracts with the aim of this literature review, which was to have the main content investigating early mobilization of surgical wound healing in cases of caesarean section and only 5 journals were selected to be analysed.

The strategy in searching the literature is attached to

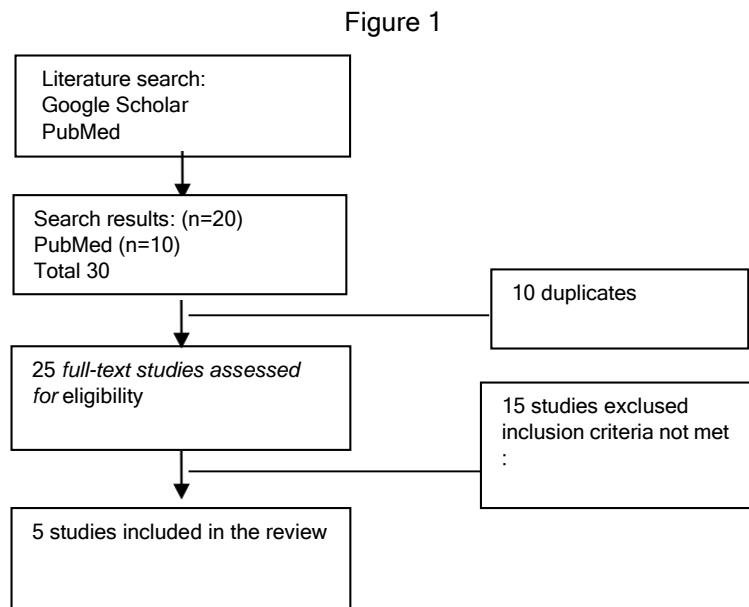


Figure 1. Flow of literature review

### 3. Results and Discussion

#### 3.1. Results

The authors conducted an exploration of the journal through a journal database based on the conformity of criteria that have been defined and keywords that have been established, namely Incidence of post-placental iud expulsion in women of childbearing age

*Table 1. Results of literature review*

Writer's Name	Title	Method	Sampling technique	Sample	Data analysis	Research result
Pipit 2016	The relationship between post-placental IUD insertion time and interval with the incidence of expulsion in PMB Tarmiyah	Cross sectional	Observational Analytics	35	Bivariat	There is a relationship between post-placental IUD insertion and the incidence of IUD expulsion (P value <0.05)
Ramadan 2015	The relationship between IUD insertion time and the incidence of expulsion at the Jetis Public Health Center, Yogyakarta City	Cross Sectional	Analytic descriptive	55	Bivariat	Most of the time IUD insertion occurs expulsion within 10 minutes post placenta that is equal to 62.3%.
Herbert Situmorang, Ivanna T Setijanto, Biran Affandi 2017	Postplacental Cu T380A IUD: Acceptance, Effectiveness and Side Effects	Observation	Analytic	234	Bivariat	There was an incidence of expulsion in women who performed post-placental IUD insertion of 4.7% with a p value <0.05
Rumiyati, Handayani 2015	Description of the incidence of post-delivery IUD expulsion	Cross Sectional	Descriptive observational	65	Bivariat	There is a relationship between the incidence of post-placental IUD insertion and the incidence of expulsion with p <0.05
Grimes et al 2014	Immediate postpartum insertion of intrauterine device	Cross sectional	Randomized control	45	Bivariat Test	The Tcu 200 IUD insertion has a more rendering expulsion rate compared to other types of IUDs.

#### 3.2. Discussion

Based on the results of the literature review that has been presented, it is known that the advantages of the Post Placenta IUD KB are that it can be directly accessed by mothers who gave birth in health services, it is effective and safe for women who are HIV positive, fertility can return more quickly after removal [14]. does not affect breast milk, does not interfere with sexual intercourse and there is no pain on insertion [3]. Post-placental IUD can be an alternative choice for pregnant women, especially third trimester pregnant women in using this type of family planning after giving birth, because mothers do not need to be embarrassed anymore when opening the feminine area during the installation process because the mother is still in labor. Studies on the use of postpartum contraception among women in Indonesia are still limited [2].

However, In December 2013 it was noted that the results of the service for New Contraceptive Participant Postpartum/Post Miscarriage were as many as 86,455 out of 681,175 new KB participants with details as many as 12,239 IUD (Intra Uterine Device) participants (14.16%), 2,774 MOW participants (3.21%), 34 MOP participants (0.04%), 2,476 Condom participants (2.86%),

8109 Implant participants (9.38%), 44,342 Injection participants (51.29%), and 16,481 Pills participants (19.06 %). So from the data above it can be concluded that the mother's motivation in using the postpartum IUD is still far lower when compared to the use of injectable and pill contraception [3].

Postpartum contraception, namely, the desired number of ideal children, knowledge about fertility in the postpartum period, intention and awareness to use postpartum contraceptive methods and implementation of postpartum contraceptive use [7]. The desire to have no more children or to delay the next pregnancy at least one year in the future causes 96% of mothers to be interested in using a contraceptive method even though they are not sure about the method of contraception. Studies on the use of postpartum contraception in women in Indonesia are still limited [7].

However, based on the results of BKKBN monitoring of postnatal and post-abortion family planning services. In December 2013 it was noted that the results of the service for New Contraceptive Participant Postpartum/Post Miscarriage were as many as 86,455 out of 681,175 new KB participants with details as many as 12,239 IUD (Intra Uterine Device) participants (14.16%), 2,774 MOW participants (3.21%), 34 MOP participants (0.04%), 2,476 Condom participants (2.86%), 8109 Implant participants (9.38%), 44,342 Injection participants (51.29%), and 16,481 Pills participants (19.06 %) [3]. So from the data above, it can be concluded that the mother's motivation in using the postpartum IUD is still far lower when compared to the use of injectable and pill contraception. There are several things that affect the motivation of mothers in the use of postpartum contraception, namely, the desired number of ideal children, knowledge about fertility in the postpartum period, intention and awareness to use postpartum contraceptive methods and implementation of postpartum contraceptive use. The desire to have no more children or to delay the next pregnancy at least one year in the future causes 96% of mothers to be interested in using a contraceptive method even though they are not sure about using the contraceptive method.

Users of AKDR contraceptives are in the age range of young adults. In accordance with research by [12] which states the use of contraception including the most AKDR is at the age of 20-35 years. Age affects a person's ability to conceive, the fertile period lasts at the age of 20-35 years, the older after the lower the rate of pregnancy, expulsion and failure of AKDR [15]. Akdr expulsion is the release of the AKDR from the uterus, most often occurring 30-90 days after installation. In addition, changes in location to discharge in the installation of post placental AKDR remained varied throughout the study, but postnatal installation between 10 minutes and 48 hours post-delivery was associated with an increased risk of change in location and expulsion when compared to the installation of intervals at 4-6 weeks post-delivery.

Expulsion more often occurs in the first three months after installation, After that, the number of events dropped sharply. This is due to anatomical and physiological changes during the postpartum period that can increase the risk of expulsion. Uterine subinvolution, excessive contraction, and persistent cervical dilation due to excessive passage can also increase the risk of expulsion. It is evident that most expulsions and displacement occur during the first 90 days after delivery. All of these factors validate the higher expulsion rate observed after immediate postpartum inertia than the interval inertia. In addition the cause of the accusation is because the size of the AKDR is too small or too large (the AKDR is too small higher than the larger AKDR) and because the imperfect location of the AKDR in the uterus. This is in accordance with the study faundes et al. (2000) to observe changes in the position of the AKDR day 1, 30, and 90. Malposi for the first 90 days. However, at 90 days after installation only six were malpositioned. The authors concluded that akdr does not accommodate its position in the uterine cavity and can move up and down.22 Similarly, [13] found that 97% of 32 AKDR users experienced a close change for 2 months after installation. They also concluded that there was movement of AKDR in the uterus in the first few months after installation.

The results of this study supported by [13] said there was no significant association between age and the incidence of IUD expulsion, either from normal labor or *sectio caesarea*. Although there is no statistical association, it can be seen from the percentage of ecstasy incidence at the age of <35 years more (76.19%) than at the age of >35 years (23.80%). The results are supported [13] which states that expulsion occurs at the age of <35 years (73.3%)

The results of this study are almost the same as previous studies can be because the two have similar sample characteristics that are both acceptors of *post-placental* IUDs regardless of the type of delivery. Both facts are in accordance with the theory that in young women more often expulsion occurs compared to women with older age [15].

IUD expulsion is more common in younger women than older women because uterine contractions during the first few months after the IUD or during the menstrual period can push the

IUD out so that it can push the IUD out. There is partial or total expulsion. Increased menstrual blood counts and abdominal pain are the main effects that cause IUD expulsion in the first three months after installation. The timing of the installation of the IUD is a risk factor for IUD expulsion event. The results of this study are the same as previous research conducted by [14] which stated that there is a relationship between the time of installation of IUDs and the incidence of IUD expulsion [16]. Other studies conducted by [18] also support this fact with the result of a relationship between the installation of *post-placental* IUD [16]. The absence of differences in results in the three studies above can be due to the time of installation of IUDs and installation techniques are the same. The increased incidence of *post-placental* discharge according to Sucak research, et al. 2015 shows that the large risk of *post-placental* IUD acoustization either through normal labor or sectio caesarea has an equally large risk [13]. The risk of expulsion is higher if inserted after 48 hours of *postpartum* than within 10 minutes after the placenta is born because the most rapid process of involution is within the first 10 minutes. Uterine contraction for involution is directed to the fundus, so the principle of installation of *postpartum* IUD is that the insertion should be within 10 minutes and put it should reach the fundus [18]. IUD can be installed at some time during the menstrual cycle, commonly called IUD intervals. At that time the installation is easy because the *canalis servicis* is slightly dilated and the chances of pregnancy are very small, the pain is less, and the bleeding is not so much. IUDs can also be installed post-delivery [18]. Post-delivery is also the time that can be used to install an IUD that it is called a *post placental IUD*. The ideal time to install a post-natal IUD is 10 minutes after the discharge of the placenta or no later than 48 hours *postpartum* [16]. Expulsion events are more common in the first three months after installation, after which the rate of expulsion events decreases [19]. To avoid the occurrence of IUD expulsion, it is necessary to do examination and counseling before installation. Checks are performed to determine the condition and make sure the client can use the IUD. Counseling aims to provide information about the factors of the client that affect the occurrence of IUD expulsion, one of which is psychic factors. With these efforts, it is expected that the IUD is successfully installed properly and the occurrence of expulsion can be prevented. The success of IUD installation is determined by the installation time, the health workers who installed it and its installation techniques [19]. The occurrence of *expulsion of postpartum* IUDs can be caused because at this time the condition of the uterus is still large and *canalis servicis* is open so that when inserted the IUD [20].

#### 4. Conclusion

From all the journals that have been reviewed and taken as literature, it is found that all research variables are related, it can be concluded that the installation of post placental IUDs has the opportunity to experience an expulsion event.

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