

Research

AN OVERVIEW ABOUT THE USE OF ANTIBIOTIC IN PREGNANCY AND NURSING MOTHER IN MAKASSAR

Darmawansyih¹, Nadyah Haruna²

1. Medical and Health Science Faculty of Alauddin Islamic State University
E-mail : darmawansyih@uin-alauddin.ac.id
2. Medical and Health Science Faculty of Alauddin Islamic State University

Abstract

Introduction. Pregnancy is a physiological process that needs to be well prepared due to the correlation from mother and the fetus. By the same token nursing is also alike that all the substances which consumed by the mother will get in to fetal circulation. It can be denied that the condition in our community drug consumption on pregnancies women and nursing whom use drugs and supplements during the period of organogenesis progress will give a high risk of fetal defects and adverse impact to their baby. **Aims.** For that reasons the aim of this study is to describe the use of antibiotics in pregnancy and nursing mother in the Pertiwi Maternal and Child's Hospital, Makassar 2014. **Methods.** This study was descriptive that involve all pregnancies and nursing mothers who use antibiotic are the population. Total sampling as much as 32 pregnancies and 329 nursing mothers who used antibiotics taken from Pertiwi Maternal and Child's Hospital. **Result.** Some principal findings from this study are first during pregnancy the main cause that made the pregnancies used antibiotics depending on the illness experienced. Another finding is the most antibiotics that used by the pregnancies are Amoxicillin, Ampicillin and Cefadroxil where some of them bought it by their self without prescription. Another crucial finding is 329 nursing mothers use amoxicillin because of the rupture of the perineum without sensibility test before. **Conclusion.** This study can be drawn principal that antibiotics are the most widely used and safest when compared with other antibiotics is amoxicillin and ampicillin from the penicillin group. Another conclusion that can be drawn is the use of antibiotics during pregnancy should take into consideration several aspects, circumstances or maternal disease and the possibility of teratogenic drugs.

Keywords: antibiotics, nursing mother, pregnancy

Introduction

Pregnancy and breastfeeding is a physiological process that needs to be well prepared. During the pregnancy, mother and foetus is stay in one function units where almost all of the substances which consumed

by the mother will get in to foetal circulation. Almost the same with breast feeding, during the process babies are still very possible to receive the nutrients from their mother. During pregnancy and breast feeding unexpected condition could happen when a mother sometimes have health problems that required antibiotic intervention.

Antibiotics derived from all or certain parts of microorganisms which used to treat bacterial infections. Antibiotics can kill microorganisms or stop reproduction of bacteria also help the body's natural defence system to eliminate bacteria but antibiotics are not effective against virus. Antibiotic widely used to treat various types of infection caused by bacteria or also for prevention of infection. Research in Riyadh, Saudi Arabia showed 77,6 % a high use of antibiotics without prescription. The highest use of antibiotics to treat a sore throat and diarrhea (90%), followed by urinary tract infection (75%), acute bronchitis (73%),

otitis media (51%) and acute sinusitis (40%). Metronidazole (89%) and ciprofloxacin (86%) is generally given for diarrhea and urinary tract infections, while amoxicillin/clavulanic acid was given (51%) for other cases. None of the pharmacist asked about a history of allergy to antibiotics or provided information about antibiotics. Only 23% asked about the pregnancy status on the delivery of antibiotics to cope with urinary tract infections.

During the pregnancy a woman have to consume antibiotics due to the infection. In 1987, CDC examined the cases of pregnancies in New York State, it was mostly to get an average of 3.8 medication prescription are not vitamins. It was crucially founded that some of these drugs consumed by pregnant women without a prescription. Most of these drugs have not all compromise to the foetus. Even though all kinds of antibiotics given to pregnant women is good for medicinal purposes in

contrary there is no exception that it will be able to enter the unit foetus.

Antibiotics are widely used in pregnancy and nursing mother. Because of the potential side effects for the mother and foetus, and the possibility of antibiotics to penetrate the barrier of breast milk and affect the baby's development, the use of antibiotics should be used if there is a clear indication. The main principle of treatment of pregnancy and nursing mother with the disease is to consider whether appropriate treatment if she is not she is pregnant. Usually there are a variety of options, and for this reason the second principle is to evaluate the safety of drugs for the mother and foetus

Pregnancy and breast feeding will affect the selection of antibiotics. Penicillin and cephalosporin are generally regarded as the first choice in pregnancy and nursing mother preparation, for administration of most of the other antibiotics associated with an increased risk of malformations in the

foetus. For some antibiotics, such as erythromycin, the risk is low and sometimes every risk to the foetus must be weighed against the seriousness of the infection in the mother. Several types of antibiotics can cause abnormalities in foetus. This happens because the antibiotics are given to pregnant women can affect the foetus through the placenta, or may be teratogenic effect. In humans, teratogenic effect occurrence period is from day 17 to day 54 post conception. In an effort to regulate the delivery of drugs given during pregnancy, the U.S. Food and Drug Administration (FDA-USA) and the Australian Drug Evaluation Committee classifies drugs into categories A, B, C, D and X based on teratogenic of the drugs. Starting from safest to prohibited gift in pregnancy.

There are antibiotics that are often used for adults, but it can't be used on pregnancy and nursing mothers. Tetracycline antibiotics group is not recommended to use in nursing mothers

because of the side effects interfere with the growth of baby teeth. This crucial problem need awareness on reducing drug utilization which not appropriate dose and indication, also avoid the side effects that could impact the future.

Methods

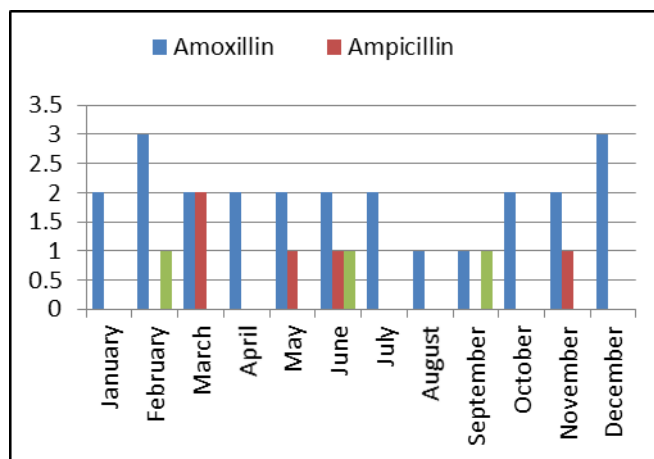
This research is an observational research with descriptive approach. It was conducted with a view secondary data from medical records to identify the types of antibiotic that used in pregnancy and nursing mother as well as see the disease that indicate these antibiotics. Research was conducted on the Pertiwi Maternal and Child's Hospital Makassar in April-June, 2015.

The population in this study were all patients of pregnancy and nursing mothers who use antibiotics in the Pertiwi Maternal and Child's Hospital, January-December 2014. The sample in this study were all patients of pregnancy who use antibiotics and taken by total sampling, during the

period in question by recording secondary data from medical records of pregnancy who use antibiotics in RSIA Pertiwi, the period January- December 2014 that pregnancy were 32 and as many as 329 people nursing mothers.

Results And Discussion

All pregnancies and nursing woman who visited Pertiwi Maternal and Child Hospital and got the antibiotics are included in this study. The use of antibiotic are clearly show in the graphic below



The Use of Antibiotics in Pregnancy

The most commonly antibiotic that used is amoxicillin, it followed by another antibiotics ampicillin and cefadroxil. Based

on the results of research in the Pertiwi Maternal and Child's Hospital conducted from April to June 2015 shows that pregnant women who used antibiotics in 2014 as many as 32 people, consisting of amoxicillin, ampicillin and cefadroxil. They got these antibiotics since they're suffered due to disorders of the reproductive system such as flour albus which is most common in pregnancy because of the instability of the hormone level, premature rupture of membranes which occurs before birth process underway that could increase morbidity and perinatal mortality and maternal, and urinary tract infection (UTI) often occurs in women during pregnancy. Without treatment it can affect the state of the mother and foetus.

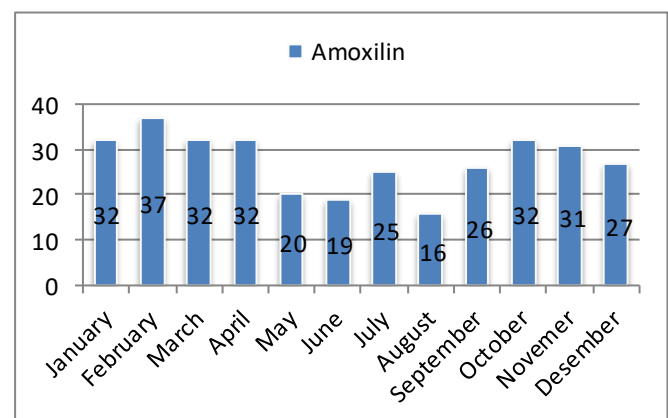
Another finding on this research that in January, April, July and August it showed that antibiotic drug used only ampicillin. This condition is possible since in January, April, July and August, all pregnancies who got the antibiotics in to the

hospital only patient with flour albus disease. Based on the guideline book of pharmaceutical care for pregnant and lactating women it explained that amoxicillin and ampicillin is the safe first choice therapy in pregnant women if they got disease like flour albus. It slightly different in February and September where antibiotic that used by the patients are amoxicillin and cefadroxil. From medical records of the patients its clearly shows that in February and September beside flour albus disease, and urinary tract infection (UTI) there also found patient with premature rupture of membranes (PROM). The same condition in June found that some antibiotics, such as amoxicillin, ampicillin and cefadroxil are used with the same disease in February and September) were observed. According to the pharmaceutical guideline book for pregnancy and lactating women that the first choice therapy for urinary tract infections with asymptomatic bacteriuria or cystitis are usually ampicillin,

cephalexin amoxicillin and the therapy for premature rupture of membranes is cefadroxil. In March, May and November amoxicillin and ampicillin antibiotic obtained by the diseases found that flour albus and urinary tract infection (UTI). Eventhough in October and December found that only amoxicillin has been used but there are two kinds disease that suffered the pregnancy (flour albus and UTI).

This study proves that the most widely used antibiotic in pregnancy is ampicillin. The handbook pharmaceutical care for pregnancy and lactating mothers stated that the drugs are safe in pregnant women, where ampicillin and amoxicillin are the first choice antibiotics for minor infections. However according to the classification made by the ADA based on drug teratogenicity, amoxicillin and ampicillin are in B category. These drugs are likely to be safe due to unknown complications of pregnancy or defects in the fetus.

In the other hand, in other case for example on severe infections in pregnancy such premature rupture of membranes cefadroxil used by the doctor. This is line with the guideline book for pregnancy and lactating women that the first choice therapy for premature rupture of membranes is cefadroxil.



The Use of Antibiotics in Nursing Mother

Different with the pregnancy the graphic is clearly seen that the antibiotic most commonly used in nursing mother is amoksicillin. From January to December the antibiotics were given to nursing mothers is amoxicillin due to the reproductive problems such as rupture of the perineum which can lead to a UTI. It was became the

safest drugs used in nursing mothers even though it can pass through the barrier of breast milk and has the side effect. One crucial problems from this study that we can't found report about the susceptibility test before giving the drugs to the patient because it may be that pregnancy and nursing mothers have been resistant to the antibiotics given. And it would be interesting to be further research.

Conclusion

From this study we can make conclude that the most widely used and safest antibiotics for Pregnancy and nursing mothers in Makassar are amoxicillin and ampicillin. These are the first choice from other antibiotics in the penicillin group. Another conclusion that can be drawn is that the use of antibiotics during pregnancy should take into consideration several aspects, circumstances or maternal disease and the possibility of drug teratogenicity without

forgetting the need to keep doing resistance test

References

- Aggarwal,R. *et.al.*, Detection of Extended Spectrum Beta Laktamase Production among Uropathogens. *Journal of Laboratory Physicians*. 2009; 1(1).
- Darmawansyih. *Farmakologi Kebidanan*. Makassar: Alauddin Press, 2012.
- Departemen Kesehatan RI. *Pedoman Pelayanan Farmasi Untuk Ibu Hamil dan Menyusui*. 2006.
- Dorland, W. A. Newman. *Kamus Kedokteran Dorland Edisi 29*; Alih Bahasa, Huriawati Hartanto *et al.*; editor edisi bahasa Indonesia, Huriawati Hartanto, *et al.*, EGC, Jakarta;2002
- Eka, Rahayu Utami. *Antibiotika, Resistensi, dan Rasionalitas Terapi*. Fakultas Saintek, Universitas Islam Negeri Maulana Malik Ibrahim Malang. El-Hayah. 2011 1(4).diakses tanggal 5 September 2015.
- Fernandez, Beatrix Anna Maria. *Studi penggunaan antibiotik Tanpa Resep di Kabupaten Manggarai dan Manggarai Barat-NTT*. Calyptra: Jurnal Ilmiah Mahasiswa Universitas Surabaya 2013 2(2) diakses tanggal 29 Februari 2015.
- Gerard G, Nahum MD, CAPT Kathleen Uhl, USPHS, and CAPT Dianne L. Kennedy, USPHS. *Antibiotic Use in Pregnancy and Lactation What Is and Is Not Known About Teratogenic and Toxic Risks*. 2006. 107(5). diakses tanggal 13 Februari 2015.
- Gondo, Harry Kurniawan. *Penggunaan Antibiotika pada Kehamilan*. Wijaya Kusuma, Volume I, Nomor 1,

- Januari 2007, 57-62. Diakses tanggal 13 Februari 2015.
- Handayani,Dkk. *Farmakologi II*. Makassar: Alauddin Press; 2013.
- Helen K. *Buku Ajar Asuhan Kebidanan*. Jakarta: Buku Kedokteran;2007.
- Jawetz, Melnick, and Adelberg's. *Mikrobiologi Kedokteran edisi 20*. Salemba Medika. Jakarta; 2005
- Katzung, Bertram G. *Farmakologi Dasar dan Klinik*. Jakarta: Penerbit Salemba Medika; 2004.
- Kementerian Kesehatan RI. *Pedoman Umum Penggunaan Antibiotik*. 2011. <http://www.yoyoke.web.ugm.ac.id> diakses tanggal 24 Februari 2015.
- Kowalak, J.P. et al. *Professional Guide to Pathophysiology*. Lippincot Williams and Wilkins. USA;2003.
- Mansjoer, A. dkk. *Kapita Selekta Kedokteran Edisi Ketiga Jilid 1*. Media Aesculapius. FK-UI. Jakarta;2001.
- Marmi. *Asuhan Kebidanan pada Masa Nifas "Puerperium Care"*. Yogyakarta;2012.
- Maulana Mirza. *Penyakit Kehamilan dan Pengobatannya*, Jogjakarta: Katahati;2008.
- McPhee, S. J.; Papadakis, M. *Current Medical and Treatment*. Forty Eight Edition McGraw Hill. United States.1279-1280; 2009.
- Medicinus. *Antibiotics*. Scientific journal of pharmaceutical development and medical application, 2012. 25(2). diakses tanggal 25 Februari 2015.
- Mohammad, W.H.; *Antibiotika Aman dan Berbahaya Bagi Ibu Hamil*. Diakses tanggal 10 september 2015.
- Mycek, M.J.; Harvey, R.A.; Champe, P.C. *Farmakologi Ulasan Bergambar*. Widya Medika. Jakarta.1-15; 2001.
- Nazir, M. *Metode Penelitian*. Cetakan Keenam Ghalia Indonesia. Bogor;2005.
- Notoatmodjo, Soekidjo. *Metodologi Penelitian Kesehatan*. Jakarta: PT Rineka Cipta; 2012.
- Ocviyanti, Dwiana. *Tata Laksana dan Pencegahan Infeksi Saluran Kemih pada Kehamilan*. J Indon Med Assoc,. 2012; 62(12). Diakses tanggal 8 oktober 2015.
- Pelczar, J. *Dasar-dasar Mikrobiologi Jilid II*, Universitas Indonesia Press. Jakarta; 1998.
- Pollack, R.; Findlay,L; Mondschein,W.; Modesto,R.L. *Lavoratory Exercises in Microbiology*. Third edition.John Wiley and Sons Inc. United States; 2009
- Prawihardjo, Sarwono. *Ilmu Kandungan*. Jakarta: PT Bina Pustaka;2011.
- Prawihardjo, Sarwono. *Ilmu Kebidanan*. Jakarta: PT Bina Pustaka;2009.
- Rahma, Sitti. *Fisiologi Laktasi*. Alauddin university press: Makassar; 2012.
- Sanjoyo, Raden. *Obat (Biomedik Farmakologi)*. D3 Rekam Medis FMIPA Universitas Gadjah Mada. <http://www.yoyoke.web.ugm.ac.id> diakses tanggal 24 Februari 2015.
- Sartono. *Obat dan Wanita*. Bandung: penerbit ITB; 2005.
- Shihab, M.Quraish. *Tafsir Al Misbah*. Lentera Hati: Jakarta; 2009
- Sue, Jordan.*Farmakologi Kebidanan*. Jakarta:EGC.2003.
- Suhaeni, Hesty Widyasih dan Anita Rahmawati. *Perawatan Masa Nifas*. Yogyakarta: penerbit Fitramaya;2009.
- Susanti dan Mika Tri Kumala. *Farmakologi Kebidanan & Aplikasi Dalam Praktik Kebidanan*. Jakarta: CV Trans Info Media; 2013.
- Widjajanti, Nuraini. *Obat-obatan*. Yogyakarta: Penerbit Kanisius (anggota IKAPI);2006.
- Wulandari, Setyo Retno dan Sri Handayani. *Asuhan Kebidanan Masa Nifas*. Yogyakarta;2011.

