

MARINE RELATED IMPACTS ON PREGNANCIES

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Abstrak: Aktivitas manusia yang kompleks dan berkaitan dengan kelautan sering berdampak yang tidak menyenangkan, terlebih bagi wanita hamil. Indonesia sebagai negara maritim dengan beribu-ribu pulau menyebabkan sejumlah perjalanan harus dilakukan lewat laut dengan segala konsekuensi dan permasalahannya. Laut yang kaya akan sumber alam juga menjadi salah satu sumber makanan terbesar, termasuk untuk wanita hamil. Kedokteran wisata juga tidak terlepas dari kedokteran kelautan dimana masalah imunisasi yang harus dipertimbangkan ketika berkunjung ke suatu daerah yang memiliki kondisi alam bahari dan pola penyakit tertentu.

Kata kunci: Kesehatan Kelautan, laut, kehamilan

Abstract: Today's complex of marine activities often leads to inconvenient related effects, especially for pregnant women. Indonesia is maritime country with thousands of islands, requiring a number of trips made by sea with all their consequences and problems. Moreover, the sea that is rich in natural resources is also one of the biggest food sources for pregnant women. Travel medicine cannot be separated from marine health and immunization which should be considered when visiting a maritime area and its inherent diseases.

Keywords: marine health, sea, pregnancy

Marine is a general term for things related to the sea or ocean. Research on marine health has given many benefits, especially regarding seafood, for pregnant women. The benefits of marine health which is a new development in medicine that has helped to avert many pregnancy-and delivery-related complications, is now available from sea. Turbulent seas can affect pregnant females because their altered centre of gravity makes them less stable on their feet, and so they are prone to fall, injury and sometimes premature contraction and labor.¹

Nowadays, business activities frequently involve the sea. Knowledge regarding safety for pregnant divers or their traveling by ship in general is necessary. Understanding of pregnancy in these envi-

rons will allow a crew to better assist in pregnancy cases.¹

BENEFITS OF MARINE HEALTH IN PREGNANCY

It is well known that fish and seafood have many beneficial nutrients such as fish oil and minerals like calcium, chloride, potassium and iodine. On the other hand, fish and seafood can also contain harmful contaminants such as mercury. For instance, in Jakarta, Indonesia, the previous government made a policy of dumping many *becaks* into the sea which is now causing the Sunda Kelapa Sea to be permeated with many metals.²

Fish and other seafood provide fatty acids including one that is called DHA.

This fatty acid is very important for the brain structure, but mercury will harm brain development. Because of the mercury, pregnant women (and infants) have been discouraged from eating large quantities of certain fish.²

In a prospective cohort study by Olsen et al in 2006, it is reported that the routine consuming of seafood during pregnancy compared to pregnant women that never consumed fish in the first two trimesters of pregnancy shows there was an extremely strong risk factor that prevented pre-term delivery and also was associated with reduced risks of elected delivery procedures and post-term delivery.²

In a follow-up study of 341 mothers and their infants from Massachusetts by Oken et al in 2008, they examined the amount of fish that was eaten by mothers during their second trimester (a period critical for brain formation) and how much mercury they had retained. When the children turned 3 years of age, they were given a test to measure their visual motor abilities and another test to measure their receptive vocabulary, which is strongly related to intelligence. The author reported that mothers who ate the most fish had children with the highest test scores, and mothers who had the highest mercury levels had children with poorer test scores. When both the amounts of fish and mercury were considered together, the researchers discovered no overall adverse effects on child development with higher levels of fish intake. Indeed, eating fish more than twice a week was linked to improve child performance on testing.³

The mystery of the sea, especially deep sea, still has many things that have not been explored yet. Many people in Asia believe it is good to assist the diagnosis and treatment of diseases. There was a report regarding the study of the use of marine fish meal to provide a simple and acceptable method to confirm the diagnosis of suspected trimethylaminuria in children. This method of diagnosis was

quicker than with a choline load test.⁴

THE IMPACT OF MARINE RELATED ACTIVITIES DURING PREGNANCY

Beginning around 1950 with the introduction of practical scuba equipment, a few women began diving for recreation, for scientific work, and a few even for commercial purposes. Many medical practitioners did not understand about the risk of diving during pregnancy. Some of these women divers wondered about diving during pregnancy. Some early observations with pregnant animals indicated that there might be no problems. But in 1978, a group at Texas University got some pregnant sheep which were close to term, put Doppler bubble-detection devices on the umbilical vessels of the fetus, sewed things up, and put the mothers in water chambers. In the depths and dive-durations of 60ft./60minutes that do not normally require decompression stops on ascent, most of the fetuses showed a lot of bubbles on decompression even though their mothers appeared normal.⁵

There is reason for a lot of concern about the possibility of causing developmental defects. No one is likely to conduct the sort of study of female divers during pregnancy. From the ethical standpoint, such a study would be indefensible no matter what it showed or how important it seemed at the time.⁶

The advice to a diver who is or may be pregnant is to stop diving. The decompression is not the only factor in diving that might harm a fetus or the mother. The altered centre of gravity makes the females less stable on their feet, and so they are prone to falls, injuries and sometimes premature contractions and labors. The rupture of membranes is common even prior to 37 weeks age of gestation. This can cause premature labor and the increase of internal infection rates.¹

The other main issues affecting pregnancy are morning sickness, caused by hormonal changes, which affects pregnant

females to different degrees. Seasickness can compound with morning sickness to make sea journey intolerable for some, while not affecting others.¹

A multivariable study reported that females Gulf War veterans at seas did not significantly differ in risk for ectopic pregnancies, stillbirths, or miscarriages when compared with non-deployed veterans of the same time. Even some studies suggested an association between service-in-the-war and adverse reproductive outcomes for female veterans during the four years after the war. In the USA, Congress was not able to deal with the problem of crew attrition because of pregnancy. In Indonesia, there is no policy yet regarding the activities of pregnant women in ocean travel or in the military, or incurring marine duties like sailors.^{6,7}

Travelling during pregnancy

Marine health as related to pregnant woman when travelling between countries, often raises problems, such as certain immunization or pandemic diseases, which create concerns about running routine preventative for medicine tests.⁸

As we know, Indonesia has two seasons that might infect travelers' diseases. Pregnant women who might incur pregnancy during ocean travel should consider preconceptional immunization to prevent diseases in the offspring. Since as many as 50% of pregnancies are unplanned, reproductive-aged women should consider maintaining current immunizations during routine check-ups in case an unplanned pregnancy coincides with a need for traveling.⁸

Preconceptional immunizations are preferred to vaccination during pregnancy, because they decrease the risk to the unborn child. A woman should defer pregnancy for at least 28 days after receiving live vaccines (e.g., MMR and yellow fever), because of the theoretical risk of transmission to the fetus.⁸

However, no harm to the fetus has

been reported from the unintentional administration of these vaccines during pregnancy, and pregnancy termination is not recommended after an inadvertent exposure. Vaccination of susceptible women during the postpartum period, especially for rubella and varicella, is another opportunity for prevention, and these vaccines should be encouraged and administered (even for breastfeeding mothers) before discharge from the hospital.⁸

According to the American College of Obstetrics and Gynecology, the safest time for a pregnant woman to travel including ocean travel is during the second trimester (18-24 weeks), when she usually feels best and is in least danger of spontaneous abortion or premature labor. A woman in the third trimester should be advised to stay within 300 miles of home because of concerns about access to medical care in case of problems such as hypertension, phlebitis, or premature labor. Pregnant women should be advised to consult with their health-care providers before making any travel decisions. Collaboration between travel health experts and obstetricians is helpful in weighing benefits and risks based on destination and recommended preventive and treatment measures. In general, pregnant women with serious underlying illnesses should be advised not to travel to developing countries.^{8,9}

General recommendations for travel

A pregnant woman should be advised to travel with at least one companion; she should also be advised that, during her pregnancy, her level of comfort may be adversely affected by traveling. Typical problems of pregnant travelers are the same as those experienced by any pregnant woman: fatigue, heartburn, indigestion, constipation, vaginal discharge, leg cramps, increased frequency of urination, and hemorrhoids. During travel, pregnant women can take preventive measures including periodic movement of the legs (to decrease venous stasis). Pregnant

women should always use seatbelts while seated, as a weaving motion is not predictable and may cause significant trauma.⁹

Signs and symptoms that indicate the need for immediate medical attention are vaginal bleeding, passing tissue or clots, abdominal pain or cramps, contractions, ruptured membranes, excessive leg swelling or pain, headaches, or visual problems.¹

Sea travel during pregnancy

Most cruise lines have a much earlier cut-off period for pregnant travelers than airlines do. Usually, the pregnant woman can travel through the first 26 weeks, given there are no pregnancy complications. Some cruise lines won't allow pregnant women to board past 24 weeks. So, the pregnant woman must ask about restrictions before making reservations.^{1,9}

The pregnant woman should keep in mind that the motion of sea travel may very well upset the stomach during pregnancy, especially if this is the first time. Traveling by sea is generally safe for women while they are pregnant, but there are a few considerations to make the trip safer and more comfortable.^{1,9}

Greatest risks for pregnant travelers

Motor vehicle accidents on the beach are a major cause of morbidity and mortality for pregnant women. When available, safety belts should be fastened at the pelvic area. Lap and shoulder restraints are best. In most accidents, the fetus recovers quickly from the safety belt pressure. However, even after seemingly mild blunt trauma, a physician should be consulted.^{1,9}

Pregnant women should be advised clearly that the best preventive measures are to avoid potentially contaminated water and food, as with other enteric infections.^{3,4,9}

Scuba diving should be avoided in pregnancy because of the risk of the decompression syndrome in the fetus.^{5,6}

CONCLUSION

Marine health is important for pregnant women, especially in Indonesia, as well as some activities related to long journeys and the consumption of seafood.

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