

INTISARI

Tanaman mimba (*Azadirachta indica* A. Juss.) mempunyai khasiat dalam pengobatan. Di Indonesia daun mimba digunakan untuk obat rematik, tukak, dan diabetes. Penggunaan obat tradisional perlu memperhatikan faktor keamanan. Tujuan dari penelitian ini untuk mengetahui efek teratogenik ekstrak etanol daun mimba pada tikus.

Penelitian ini mengikuti rancangan acak lengkap pola searah. Lima puluh ekor tikus betina (galur "SD", umur 2,5-3 bulan, berat badan 150-200 gram, siklus teratur, dan masih perawan), dibagi secara acak menjadi 5 kelompok sama banyak. Kelompok I diberi PVP 10% (2000 mg/kgBB) sebagai kontrol negatif, kelompok II, III, IV, V diberi perlakuan suspensi ekstrak etanol daun mimba masing-masing sebesar 56 mg/kg BB, 182 mg/kg BB, 591,5 mg/kg BB, dan 1922,4 mg/kg BB. Perlakuan tersebut diberikan secara oral, sehari sekali pada hari keenam sampai hari kelimabelas masa bunting (masa organogenesis) tikus.

Pengamatan terhadap pertambahan berat badan dari hari pertama sebelum perkawinan sampai hari ke-19 masa bunting tikus. Berat hati dan uterus diamati pada akhir masa bunting dengan mengorbankan hewan uji. Pengamatan efek teratogenik yang lain yaitu biometrika janin (jumlah resorpsi awal dan akhir, jumlah kematian janin, panjang badan janin, berat badan janin, berat plasenta), gros morfologi (cacat bentuk luar tubuh), sistem skeletal (penulangan), dan histopatologi (cacat seluler). Perubahan berat badan induk dianalisis dengan General Linear Measure dilanjutkan LSD. Berat hati dan uterus dianalisis dengan ANOVA dilanjutkan dengan LSD dengan taraf kepercayaan 95%. Data biometrika janin, gros morfologi, dan sistem skeletal dianalisis dengan Kruskal Wallis test dilanjutkan Mann-Whitney U test dengan taraf kepercayaan 95%. Pengamatan histopatologi diolah secara kualitatif deskriptif.

Hasil penelitian menunjukkan bahwa ekstrak etanol daun mimba dengan dosis 56 mg/kg BB, 182 mg/kg BB, 591,5 mg/kg BB, dan 1922,4 mg/kg BB mempunyai potensi efek teratogenik. Pada dosis 56 mg/kg BB dan 182 mg/kg BB terjadi cacat mikroskopis pada organ hati janin. Dosis 591,5 mg/kg BB terjadi penambahan berat badan janin, penambahan panjang badan janin, cacat skeletal pada sakral, cacat mikroskopis pada organ hati dan ginjal baik induk maupun janin. Dosis 1922,4 mg/kg BB menimbulkan kelainan berupa penambahan berat plasenta, penambahan berat badan janin, penambahan panjang badan badan janin, cacat makroskopis berupa kongesti, cacat skeletal pada sternum dan sakral, cacat mikroskopis pada organ hati, ginjal, uterus, dan ovarium, dan terjadi kenaikan berat badan induk.

Kesimpulannya pemberian ekstrak etanol daun mimba dosis 56 mg/kg BB, 182 mg/kg BB, 591,5 mg/kg BB, dan 1922,4 mg/kg BB selama masa organogenesis tikus diduga berpotensi teratogenik.

ABSTRACT

Azadirachta indica plant has efficacy in treatment. In Indonesia, the leaves of neem are used for rheumatic, ulcer, and diabetic drug. This study is to determine the safety of neem leaves extract into pregnancy rats. The used of tradisional medicine must be safety. The purpose of this study is to detremine its effest and teratogenic potency.

The study was done using completely randomized design. Fifty female rats ("SD" strain, in the age 2,5-3 month, in the weight 150-200 gr, the menstruation cycles in order, and still virgin) were devided randomly into five equal groups. The first group as negative control was given PVP 10% (2000 mg/kg BW). The second, third, fourth, and fifth groups were given orally, once a day, starting at the 6th day until the 15th day of the pregnant time (time of organogenesis).

The Investigation of the body weight changing was done at the 1st day before mating, ended at day od 19th during the pregnant time. The liver and uterus weight were evaluated in the end of pregnancy through ceasar operation. Investigation was done about biometrics, gross morphology, skeletal system, and histopathology. Litters body weight changing was analyzed with General Linear Measure continue with LSD. The data of liver weighth and uterus weight were analyzed with One Way Anova continue LSD with 95% reliable level. The data biometrics, gross morphology, and skeletal system were analyzed by a Kruskall Wallis analysis and continued by a Mann-Whitney U test with believing degree of 95%.

The results showed that the ethanol extract of neem leaves dose 56 mg/kg BW, 182 mg/kg BW, 591.5 mg/kg BW, and dose 1922.4 mg/kg BW can rise the teratogenic effect. Dose 56 mg/kg BW and 182 mg/kg BW rises microscopy's defect in embrio's liver. Dose 591.5 mg/kg BW can rise the teratogenic effect which is increasing on the body weight embrio's, incresing body long embrio's, strangling from of the sacral's bone, damaging if the cell of embrio's liver and kidney. The highest dose 1922.4 mg/kg BW rises increasing on the plasenta's weight, macroscopy's defect in the form of congestion, microscopy's defect in the parent's uterus and ovarium.

In conclusion, giving an ethanol extract of neem leaves during the organogenesis time of rat have a potential of teratogenic effect.