

THE HISTOLOGICAL DIFFERENCES OF BALB/C MICE UTERINE GLANDS IN GESTATION PERIOD WHICH GIVEN KACIP FATIMAH (*LABISIA PUMILA*) EXPOSURE WITH GRADED DOSE

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ABSTRACT

Background Rumput Fatimah (*Labisia pumila*), a traditional herb, used for accelerating the delivery process. There were controversies about the use of *Labisia pumila*'s extract (eLP). Some articles stated there were cases of miscarriage, which is contrary to the previous research of *Labisia pumila* in experimental animal.

Method This was an experimental research with Post Only Control Group Test. The samples were 20 pregnant Balb/c mice randomly divided into 4 groups. The control group had given standard food and beverage. Every treatment group (P) administrated with eLP 13 mg/ml/mice/day. P1 administrated day 18 – 20 of pregnancy, P2 day 16 – 20 of pregnancy, P3 day 14 – 20 of pregnancy. Day 20, mice were terminated, the uterus was taken and was made histology slide.

Result Compared with control, P1 showed insignificant differences of uterine glands damage ($p=0,213$). P2 showed insignificant differences of uterine glands damage ($p=0,050$). P3 showed insignificant differences of uterine glands damage ($p=0,070$).

Conclusion There were insignificant differences of uterine glands histology in P compared both with the control group and the treatment group.

Keywords *Labisia pumila*, Balb/c mice, endometrium, uterine glands, histology

ABSTRAK

PERBEDAAN GAMBARAN HISTOLOGI KELENJAR UTERINA UTERUS MENCIT BALB/C DALAM PERIODE GESTASI YANG DIBERI PAPARAN EKSTRAK KACIP FATIMAH (*LABISIA PUMILA*) DENGAN DOSIS BERTINGKAT

Latar Belakang Rumput Fatimah (*Labisia pumila*) adalah obat tradisional untuk mempercepat proses kelahiran. Terdapat kontroversi mengenai penggunaan ekstrak *Labisia pumila* (eLP). Beberapa artikel menyebutkan bahwa terdapat sejumlah kasus abortus, hal ini bertolak belakang dengan penelitian *Labisia pumila* pada hewan coba.

Metode Penelitian ini merupakan penelitian eksperimental dengan *Post Only Control Group Test*. Sampel 20 ekor mencit balb/c betina dalam periode gestasi dibagi secara acak menjadi 4 kelompok. Setiap kelompok perlakuan (P) diberi eLP dengan dosis 13mg/ml/mencit/hari dengan hari pemberian yang berbeda. Kelompok kontrol hanya diberi makanan dan minuman standar, pada P1 ekstrak diberikan hari ke 18 – 20 periode gestasi, P2 hari ke 16 – 20, dan P3 hari ke 18 – 20. Hari ke- 20 dilakukan terminasi, pengambilan uterus, dan pembuatan preparat.

Hasil Dibandingkan dengan kontrol, P1 menunjukkan perbedaan yang tidak signifikan pada kerusakan kelenjar uterina ($p=0,213$). P2 menunjukkan perbedaan yang tidak signifikan pada kerusakan kelenjar uterina ($p=0,050$). P3 menunjukkan perbedaan yang tidak signifikan pada kerusakan kelenjar uterina ($p=0,070$).

Kesimpulan Terdapat perbedaan gambaran histologi uterus antara P dengan kontrol maupun antar P.

Kata Kunci *Labisia pumila*, mencit Balb/c, endometrium, kelenjar uterina, histologi

INTRODUCTION

Rumput Fatimah (*Labisia pumila*) is one of traditional herb that widely known in Indonesia. This herb is also known as Akar Fatimah, Kacip Fatimah, and Daun Juang Juang.^{1,2} The Dayak Benuaq Tribe in East Kalimantan, Indonesia use it for accelerating the delivery process.¹

According to the previous research, *Labisia pumila* contains phytoestrogen compounds which are: Flavonols, Flavonoids and Isoflavonoids therefore *Labisia pumila* have the estrogene-like effect if binds with the selective receptors.^{3,4}

There were controversies about the use of *Labisia pumila*'s extract (eLP). Some articles stated that there were cases of miscarriage, which is contrary to the previous research of *Labisia pumila* in experimental animal that given daily dose of oral eLP during estrous phase, pregnancy, and lactation periode.⁵

The objective of the study is to determine differences of pregnant Balb/c mice uterus histology with the exposure of graded dose eLP administered orally in the end of gestation phase.

METHOD

This was an experimental research with Post Only Control Group Test. The samples were 20 pregnant Balb/c mice randomly divided into 4 groups. The control group had given standard food and beverage. Every treatment group (P) given standard food and beverage and administrated with eLP 13 mg/ml/mice/day. P1 were administrated on day 18 – 20 of pregnancy, P2 were administrated on day 16 – 20 of pregnancy, and P3 were administrated on day 14 – 20 of pregnancy. On day 20, mice were terminated, the uterus was taken and made histology slide (stained with HE) and were read in 5 field of view.

RESULT

Microscopic Analysis

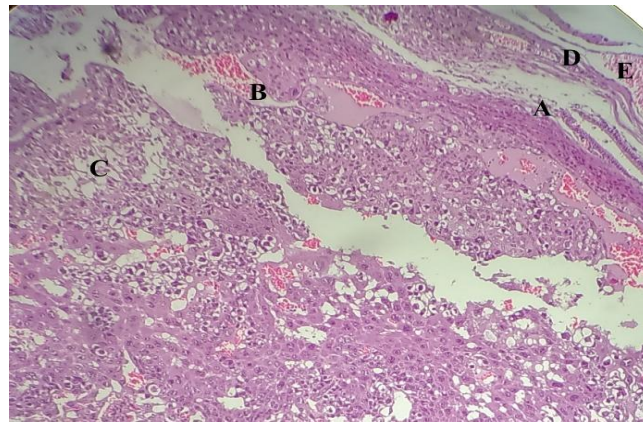


Figure 1. Microscopic Representation of Mice Uterus in the Control Group
(C: Damaged uterine glands)

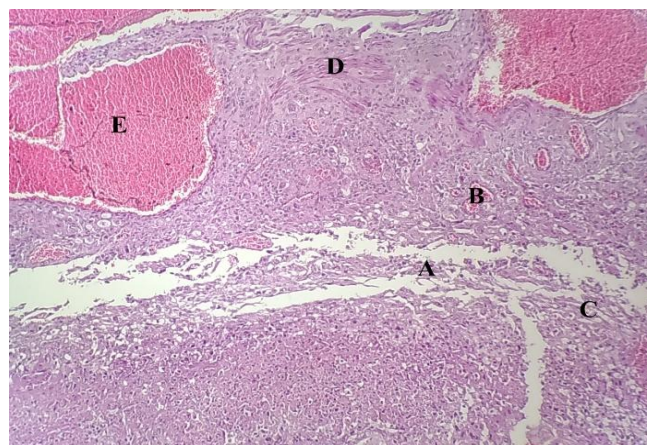


Figure 2. Microscopic Representation of Mice Uterus in PI
(C: Damaged uterine glands)



Figure 3. Microscopic Representation of Mice Uterus in PII
(A: Damaged myometrial muscle, B: A very wide bleeding in myometrial blood vessels)

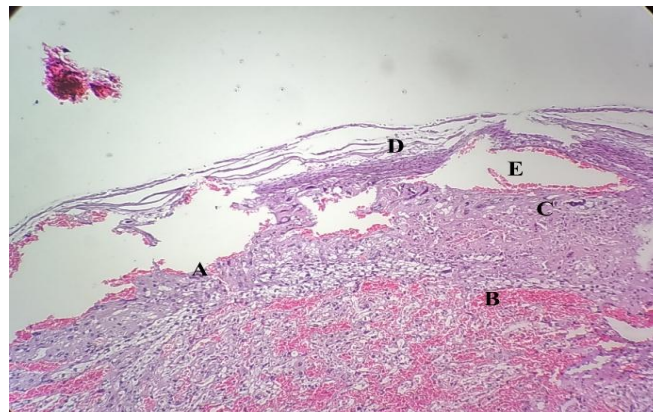


Figure 4. Microscopic Representation of Mice Uterus in PII
(C: Damaged uterine glands)

DESCRIPTIVE AND ANALYTIC ANALYSIS

During histological observation, differences of the treatment group were observed when compared both with the control and between the treatment group.

The highest uterine glands damage of the treatment group observed in PII when the lowest is in PI and no treatment group showed a significant differences compared with control (P1, p = 0,213; P2, p = 0,050; P3, p = 0,070).

Tabel 3. The P Score and The Mean Of Uterine Glands Damage

Group	p			Mean
	PI	PII	PIII	
Kontrol	0,213	0,050	0,070	2,880
PI	-	0,048*	0,050	2,550
PII	-	-	0,637	3,867
PIII	-	-	-	3,800

* = significant

DISCUSSION

The damage that occurred in endometrium was contrary to the previous study which showed and estrogen stimulation will lead to the proliferation of stroma and uterine glands or just the stoma or the glands itself.⁶ The damage of the uterine glands correlate to the high and irregular frequency of myometrium because of the dose of pure estrogen in *Labisia pumila* remain unknown.

CONCLUSION

There was differences of the treatment group both compared with the control and compared between the treatment group. PII shows the most damaged tissue among all the treatment group.

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