

**A Case of Factor XII Deficiency Which was
Found in Recurrent Spontaneous Abortion**

Y. S. Nam, I. H. Kim, T. K. Yoon, C. N. Lee and K. Y. Cha

Department of Obstetrics and Gynecology, College of Medicine,
Pocheon CHA University, Pocheon, Korea

= Abstract =

Activated factor XII(FXIIc : Hageman factor) is a central component of the contact activation system of blood coagulation, fibrinolysis, and kinin formation. Although patients deficient in FXIIc(up to 50% of normal) do not show increased bleeding tendency, thrombotic complications were reported in 8% to 10% among these patients. The reduced generation of bradykinin resulting in diminished release of tissue plasminogen activator is proposed as a cause of thrombosis in factor XII(FXII) – deficient patients. Similarly, in patients with elevated levels of circulating antiphospholipid antibodies, hemostasis may be impaired resulting in excessive thrombophilia. Both vascular and placental thromboses because of antiphospholipid antibodies or FXIIc deficiency have been reported to be associated with recurrent fetal loss. We have experienced a case of factor XII deficiency in woman with recurrent spontaneous abortion. So we report this case with a brief review of literatures.

Key Words : Recurrent spontaneous abortion, Factor XII deficiency

12
가 (thromboembolism)
가 가 가 Fibrinogen
fibrinogen
fibrinogen (dysfibrinogenemia)
가 fibrinogen
(heterozygous) 50%
thrombin 80 – 110 mg/dL
40 – 50% 가
fibrinogen 가 가
가 fibrinogen
가 12
가 12

39
17
163 cm, 62 kg, 120 / 80 mmHg, 36.5°C,
80 / 2

가

estradiol : 19.6 pg/mL, FSH : 8.0 mIU/mL, LH : 2.0 mIU/mL, prolactin : 44.3 ng/mL, TSH : 3.98 μU/mL, T3 : 136.9 ng/dL, T4 : 10.0 μg/dL, FT4 : 1.00 ng/dL,

G : , M : ,
: 85 mg/dl, PT : 11.1 sec, PTT : 25.0 sec, :
, : , : , 3 : 116.3 mg/dl,
4 : 39.6 mg/dl, : ,
G : , : , : ,
G : , : , : ,
: , 12 : 39%(: 60 - 140%)

12

(thrombophilia)

(Davie and Ratnoff, 1964 ; MacFarlane, 1964).

가

(extrinsic)

(intrinsic)

가

가

12,

가

prothrombin time

가

가

가

partial thromboplastin time
thrombin fibrinogen fibrin

Thrombin time

partial thromboplastin time, prothrombin time,

thrombin time

3 가

가

(mixing incubation study)
(fibrinolysis) fibrin 가
plasminogen plasmin
plasminogen, plasmin,

가

가 가
Plasminogen 20.3 mg/dl
Plasminogen plasminogen plasmin
Urokinase plasminogen
streptokinase plasminogen
Plasminogen

(Albrechtsen, 1957 ; Beller et al., 1962).

Plasminogen

Plasmin 가 가 Plasmin
fibrinogen, fibrin
arginyl - lysine Fibrinogen fibrin
plasminogen fibrin (clot)가 plasmin
fibrin
plasmin fibrin (mesh) plasmin
antiplasmin

plasmin 5 가
2 - antiplasmin α - 2 - macroglobulin 가 α -
plasminogen plasmin
acid(Amicar) (Alkjaersig et al., 1959). 가 ϵ - aminocaproic
lysis time) (euglobulin

Plasminogen (plasminogen activators), plasminogen, plasmin, fibrinogen 가 . Antiplasmin antiplasmin activator . fibrin thrombin 가 . Plasmin plasminogen plasmin . Plamin fibrin

2 가 가 12 80,000 (glycoprotein) kinin 12 2 (allele) . (Mannhalter et al., 1987 ;

Aznar, 1974). 가 (Nilson et al., 1975). 가

Lupus anticoagulant 12 가 107 (heterozygous) 12 (thrombophilia) 가 12 , kinin , (Kaplan and Silverberg, 1987).

Kallikrein plasminogen 1(plasminogen activator inhibitor 1) 12 가 lupus anticoagulant 12

aPTT(activated partial thromboplastin time) 12

12 가 ,

kinin

(hypofibrinolysis) plasminogen (plasminogen activator inhibitor) plasminogen 가 가 (Nilsson et al., 1985).

(trophoblast) (Strickland et al., 1976). plasminogen 가

12c 가

가 (Schved et al., 1989).

12c 가 2 가 가 12 kallikrein

plasminogen bradykinin 가 (Kaplan and Silverberg, 1987).

12c plaminogen kallikrein 1

13 plaminogen 가 20 가 (Gris et al., 1990). 8 12c

가 6 12 12

가 (homozygous) 12 가 가 (Schved et al., 1988). 12 가

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