

## Antithrombin III

### The Study of Antithrombin III Deficiency in Patients with Recurrent Spontaneous Abortion

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**Objective:** To analyze the antithrombin II deficiency in patients with recurrent spontaneous abortion.

**Material and Method:** The blood samples were tested by chromogenic assay to evaluate the activity of antithrombin III.

**Results:** There was only one case of antithrombin III deficiency. This patient experienced one neonatal death after delivery and one FDIU (fetal death in utero). And also this patient showed a lupus anticoagulant and the prolongation of PTT.

**Conclusions:** Women with recurrent miscarriage who have no obvious identified cause should consider hematologic screening. Antithrombin III deficiency could be a cause of recurrent spontaneous abortion. But the incidence is very rare in Korean patients.

**Key Words:** Recurrent spontaneous abortion, Antithrombin III deficiency

Antithrombin inhibitor) thrombin (serine protease Xa, IXa, XIa, XIIa) (heterozygote) 50% antithrombin III gene deletion, frameshift mutation truncated protein  
 10<sup>3</sup> antithrombin III heparin-binding domain thrombin-binding domain (point mutation)가  
 Antithrombin III 80 가  
 Antithrombin III antithrombin III ~1/5,000 antithrombin III 3~8%  
 가 ( 1 ) antithrombin III (disseminated intravascular coagulation: DIC), (nephrotic  
 ( 2 ) 가 antithrombin III

syndrome), , L-asparaginase ,

Antithrombin III 10~35  
가 가 antithrombin III 80~120% 100  
(deep vein thrombosis) (pulmonary embolism) antithrombin III  
가 71.8% antithrombin  
가  
PTT가 35.4 sec

Antithrombin III chromogenic assay  
(heparin cofactor activity)  
70~130% . Anti-  
thrombin III M-partigen antithrombin III  
(immunodiffusion) (thromboembolism)  
(thrombophilia) in thrombosis) 5  
가 . Virchow (hypercoaguability),  
antithrombin III 가 (stasis), (endothelial injury) 가  
an-  
tithrombin III 가  
가

1. Antithrombin III serpin  
(serine protease inhibitor) 58,200 dalton  
가 4 (oligosaccharide chain)가 432  
2. alpha 2 (glycoprotein)  
antithrombin III  
2.7 μM (15 mg/dL)  
trisodium citrate (Becton Dickinson  
Vacutainer Systems, USA) (high affinity) 80% an-  
tithrombin III . Antithrombin III 가  
9 : 1 2 3,500 rpm 가  
5  
ACL Futra plus (Instrumentation Laboratory, USA) chromogenic assay III antithrombin III  
가  
Antithrombin III 1

antithrombin III (heterozygosity)  
가 antithrombin III 25~60% antithrombin III

antithrombin III가<sup>2</sup>  
antithrombin III 1  
antithrombin III  
antithrombin III  
6 antithrombin III  
antithrombin III  
Antithrombin III  
가 60%<sup>9</sup> 2 antithrom-  
bin III  
0.3 units/mL antithrombin III 가 39%  
, 49% , 11% 가  
antithrombin III<sup>5</sup> 40<sup>10</sup>  
Antithrombin III 60~70 antithrombin III  
antithrombin III<sup>11</sup> Antithrom-  
bin III Glasgow (Arg-393 Cys) antithrombin III  
Northwick Park (Arg-393 His)  
bin III (co-  
valent complex)  
antithrombin III 가 antithrombin III  
가 Antithrombin III  
Antithrombin III 100 antithrombin III  
rombin III antithrombin III  
bin III antithrombin III ,  
가 가  
antithrombin III  
antithrombin III  
59%  
Antithrombin III Rouen I  
(Arg-47 His), Rouen II (Arg-47 Ser), Toyama  
(Arg-47 Cys) antithrombin III 가  
Antithrombin  
III Basel (Pro-41 Leu) 가 an-  
tithrombin III가 3  
III 1/500  
45 가 가 6%<sup>9</sup>  
4.5%  
antithrombin III  
2%<sup>8</sup> (iliac vein) 가  
6~60%<sup>9</sup> (mesenteric vein)  
(homozygosity)

(disseminated intravascular coagulation: DIC)  
antithrombin III 가  
antithrombin III 가  
가 가 7,10  
Antithrombin III 가  
antithrombin III 9  
70%가 12 3  
3~4  
antithrombin III 13 an-  
tithrombin III  
14,15 An-  
tithrombin III 15,16  
가  
50% (pasteurization) antithrom-  
bin III  
51% 가 antithrombin III  
5.2 가 anti-  
antithrombin III thrombin III  
Antithrombin III  
가  
activated partial 17,18  
thromboplastin time, prothrombin time, thrombin time antithrombin III 가  
antithrombin III antithrombin III 가  
가 가  
antithrombin III 가 antithrombin III  
1 Antithrombin III  
antithrombin III antithrombin III 1  
antithrombin III  
antithrombin III  
가 L-asparaginase antithrom-  
rombin III가 antithrom-  
bin III 가  
(nephrotic syndrome)  
antithrombin III 가 가 antithrom-  
bin III가 , ,

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