

## ABSTRACT

**Background:** Hypercoagulation that initiates thrombus in deep vein thrombosis (DVT) can be reflected in an increase in F1+2. Prothrombin fragment 1 + 2 is an active peptide derived from the breakdown of prothrombin to thrombin. Prothrombin fragment 1+2 has never been used as a marker for thrombus even though F1+2 is a marker that is earlier established than D-Dimer. Researchers want to know whether there is a correlation between F1+2 and D-Dimer?.

**Aim:** Determine the correlation between F1+2 and D-Dimers in DVT patients.

**Methods:** This is a cross sectional study. The subjects of this study consisted of 40 DVT patients. The subjects obtained were examined the levels of F1+2 with sandwich enzyme immunoassay and D-Dimer with latex enhanced photometric immunoassays method. In addition the subjects are grouped based on the presence or absence of certain risk factors.

**Results:** Female DVT subjects (77.5%) were more than men (22.5%). The mean age of DVT patient was  $53.1 \pm 12$  years. Body mass index of DVT patients  $21,671 \pm 4,506$  kg/m<sup>2</sup>. DVT patients consisted of cancer patients (52.5%), hypertension (45%), bed rest more than 3 days (30%), Diabetes mellitus (DM) (15%), Congestive heart failure (CHF) (7%), history of surgery (7%), hormonal contraception (2.5%). Cancer subjects consisted of cervical cancer (30%), ovarian cancer (30%), breast cancer (10%), endometrial, lung, colon, prostate, hepatocellular cancer, tongue (5% each). Level of F1+2 is 0,479 (0,17-2,00) nmol/L and D-Dimer is 1174,5 (144-26240) ng/mL. There is a positive correlation ( $r = 0.325$ ) between F1+2 and D-Dimer level ( $p = 0.041$ , ( $p < 0.05$ )).

**Conclusion:** There was a positive correlation between Prothrombin fragment 1+2 and D-Dimer ( $r = 0,331$ ) in patients with deep vein thrombosis. The results of this study are expected to be F1 + 2 as a marker of hypercoagulability status in TVD.

**Keyword:** Deep vein thrombosis, Prothrombin fragment 1+2, D-Dimer.

## INTISARI

**Latar belakang:** Hiperkoagulasi yang mengawali terjadinya trombus pada trombus vena dalam (TVD) dapat tercermin dari peningkatan F1+2. *Prothrombin fragment 1+2* merupakan suatu peptida aktif yang berasal dari pemecahan protrombin menjadi trombin. *Prothrombin fragment 1+2* belum pernah digunakan sebagai penanda adanya trombus walaupun F1+2 merupakan penanda yang lebih awal terbentuk dibandingkan D-Dimer. Peneliti ingin mengetahui apakah terdapat korelasi antara F1+2 dengan D-Dimer?

**Tujuan:** Mengetahui korelasi antara F1+2 dan D-Dimer pada pasien TVD.

**Metode:** Penelitian ini merupakan penelitian potong lintang. Subyek penelitian terdiri dari 40 pasien TVD. Subyek yang didapatkan diperiksa kadar F1+2 dengan metode *sandwich enzyme immunoassay* dan D-Dimer dengan metode *latex enhanced photometric immunoassays*. Selain itu subyek dikelompokkan berdasarkan ada dan tidaknya faktor risiko tertentu.

**Hasil:** Subyek TVD wanita (77,5%) lebih banyak dibandingkan pria (22,5%). Rerata usia pasien TVD  $53,1 \pm 12$  tahun. Indeks massa tubuh (IMT) pasien TVD  $21,671 \pm 4,506$  kg/m<sup>2</sup>. Pasien TVD terdiri dari pasien kanker (52,5%), hipertensi (45%), tirah baring lebih dari 3 hari (30%), *Diabetes mellitus* (DM) (15%), *Congestive heart failure* (CHF) (7%), riwayat operasi (7%), kontrasepsi hormonal (2,5%). Subyek kanker terdiri dari kanker serviks (30%), kanker ovarium (30%), kanker payudara (10%), kanker endometrium, paru, kolon, prostat, hepatoseluler, lidah (masing-masing 5%). Kadar F1+2 yaitu 0,479 (0,17-2,00) nmol/L dan D-Dimer 1174,5 (144-26240) ng/mL. Terdapat korelasi yang positif ( $r = 0,325$ ) antara F1+2 dan D-Dimer ( $p = 0,041$ , ( $p < 0,05$ )).

**Simpulan:** Terdapat korelasi positif antara *Prothrombin fragment 1+2* dan D-Dimer ( $r = 0,325$ ) pada pasien trombosis vena dalam. Hasil penelitian ini diharapkan F1+2 dapat sebagai penanda status hiperkoagulabilitas pada TVD.

**Kata kunci:** trombosis vena dalam, *Prothrombin fragment 1+2*, D-Dimer