

## Uji kesesuaian hasil penilaian status volume intravaskular antara diameter vena cava inferior (IVC) dengan vascular pedicle width (VPW) = Compatibility between inferior vena cava (IVC) diameter and vascular pedicle width (VPW) in assessing intravascular volume

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### Abstrak

**ABSTRAK**  
Latar belakang. Status volume intravaskular hipovolemia atau hipervolemia dapat meningkatkan angka morbiditas dan mortalitas. Baku emas penilaian status volume intravaskular adalah pemeriksaan immunoassay, sifatnya invasif, sulit dan lama sehingga para klinisi mencari teknik yang tidak invasif, mudah dan singkat. Pemeriksaan diameter vena kava inferior IVC dan vascular pedicle width VPW merupakan teknik noninvasif yang mulai dipakai untuk menilai status volume intravaskular. Keuntungan VPW adalah dapat dilakukan pada rumah sakit yang tidak memiliki USG. Uji kesesuaian IVC dan VPW dalam menilai status volume intravaskular hanya pernah dilakukan pada pasien dengan ventilasi mekanik. Penelitian ini bertujuan untuk mengetahui kesesuaian hasil penilaian status volume intravaskular antara teknik ultrasonografi diameter IVC dengan teknik radiografi dada VPW pada pasien napas spontan. Metode. Penelitian ini merupakan uji klinis observasional analitik potong lintang untuk mengetahui kesesuaian hasil penilaian status volume intravaskular pasien di ruang resusitasi IGD antara IVC dengan VPW pada bulan Mei 2018. Didapatkan 40 subjek yang memenuhi kriteria penerimaan dan bersedia menandatangani informed consent penelitian. 40 subjek diukur VPW-nya dari hasil radiografi dada oleh sejawat Radiologi di IGD lalu dinilai diameter IVC maksimal, minimal dan reratanya serta collapsibility index-nya oleh peserta PPDS Anestesiologi dan Terapi Intensif. Terdapat 1 subjek yang dikeluarkan karena nilai VPW tidak dapat diukur. Analisis data menggunakan analisis Kappa. Hasil. Nilai median diameter IVC 1,1 cm dengan nilai minimum 0,46 cm dan maksimum 3 cm. Nilai median collapsibility index 33 dengan nilai minimum 10,2 dan maksimum 100. Nilai median VPW 5,7 cm dengan nilai minimum 3,5 cm dan maksimum 10,8 cm. Didapatkan hasil tidak adanya kesesuaian antara diameter rerata IVC dengan VPW koefisien Kappa -0,085. Tidak terdapat kesesuaian antara diameter maksimal IVC dengan VPW koefisien Kappa -0,123. Tidak terdapat kesesuaian juga antara collapsibility index dengan VPW koefisien Kappa 0,069 Simpulan. Penilaian status volume intravaskular teknik ultrasonografi diameter IVC tidak sesuai dengan teknik radiografi dada VPW. Kata Kunci: status volume intravaskular; kesesuaian; IVC; VPW

**ABSTRACT**  
Background. Intravascular volume status hypovolemia or hypervolemia can both increase morbidity and mortality. The gold standard for assessing intravascular volume is immunoassay measurement. It is an invasive measurement, difficult and requires time before a final evaluation is complete. So there is a significant need for a rapid, noninvasive and easy technique to determines volume status. Inferior vena cava IVC and vascular pedicle width VPW are noninvasive and easy technique to measure intravascular volume status. VPW can be done without USG. Compatibility between IVC and VPW had only been done in patient with mechanical ventilation. This study was conducted to see compatibility between IVC diameter and VPW for assessing intravascular volume status in spontaneous patient. Methods. This was a cross sectional analytic study in the emergency room to see compatibility between IVC diameter and VPW for assessing intravascular volume status in spontaneous patient during

May 2018. There were 40 subjects who fulfilled inclusion criteria and agreed to sign informed consent. VPW of 40 subjects were assessed by the radiologist then the maximum, minimum, mean diameter and collapsibility index of the IVC were assessed by anesthesiologist resident in the emergency room. There was 1 drop out subject due to VPW can not be measured. We use Kappa analysis for this study.. Results. Median of IVC diameter for this study was 1,1 cm, with minimum diameter was 0,46 cm and maximum was 3 cm. Median of collapsibility index was 33 , with minimum value was 10,2 and maximum was 100 . Median of VPW was 5,7 cm, with minimum outcome was 3,5 cm and maximum was 10,8 cm. We found that there was no compatibility between IVC mean diameter and VPW Kappa coefficient was -0,085 . There was also no compatibility between IVC maximum diameter and VPW Kappa coefficient -0,123 . WE also found there was no compatibility between collapsibility index of IVC and VPW Kappa coefficient 0,069 Conclusion. Assessment intravascular volume status by ultrasonography technique of IVC diameter was not compatible with radiographic technique of VPW. Keywords: intravascular volume status; compatibility; IVC; VPW.