

IR – PERPUSTAKAAN UNIVERSITAS AIRLANGGA

THESIS

**LABORATORY AND CLINICAL PROFILE OF PEDIATRIC HYDROCEPHALUS
PATIENTS WITH VENTRICULOATRIAL SHUNT IN RSUD DR. SOETOMO**



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INTERNATIONAL CLASS MEDICAL PROGRAM

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PREREQUISITE SHEET

LABORATORY AND CLINICAL PROFILE OF PEDIATRIC HYDROCEPHALUS

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This statement is to fulfil the requirement of the research module Medical Faculty of

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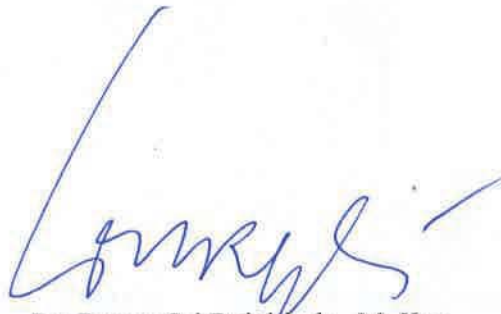


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**LABORATORY AND CLINICAL PROFILE OF PEDIATRIC HYDROCEPHALUS
PATIENTS WITH VENTRICULOATRIAL SHUNT IN RSUD DR. SOETOMO**

THESIS

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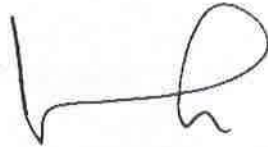
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Surabaya, 13 December 2022

Raka Ibrahim Faiz Syafrisal

RINGKASAN

PROFIL LABORATORIS DAN KLINIS PASIEN PEDIATRI HIDROSEFALUS DENGAN VENTRICULOATRIAL SHUNT DI RSUD DR. SOETOMO

Raka Ibrahim Faiz Syafrisal

Hidrosefalus merupakan sebuah kondisi abnormal dimana cairan serebrospinal atau CSF terakumulasi. Kondisi ini menyerang orang-orang dari berbagai latar belakang umur dan ras dimana prevalensi global ada pada angka 85 per 100.000. Prevalensi lebih tinggi ditemukan di daerah-daerah dengan ekonomi menengah ke bawah seperti Asia dan Afrika karena faktor kekurangan fasilitas kesehatan *perinatal*, banyaknya angka Hipertensi akibat kehamilan, serta penyakit tropis.

Gejala paling umum hidrosefalus merupakan pembesaran lingkaran kepala disertai dengan beberapa gejala lainnya. Pada masa neonatus, apneu dan bradikardi dapat terjadi namun semakin berkurang setelah seseorang melewati masa neonatus. Beberapa gejala lain juga dapat muncul seperti perubahan sifat, perubahan tingkat kesadaran, kejang, muntah dan berat badan turun. Etiologi serta penyebab hidrosefalus dapat dibagi menjadi beberapa kategori. *Acquired* hidrosefalus dapat dibagi menjadi neoplasma, vaskular, dan peradangan dengan beberapa contoh penyebab yaitu pendarahan subarachnoid, infeksi, dan malformasi vaskular. Sedangkan etiologi hidrosefalus kongenital atau *developmental* adalah aqueduct stenosis kongenital, neural tube defect, malformasi fossa posterior, kista *developmental*, dan foramen monro atresia kongenital.

Hidrosefalus dapat menjadi penyakit yang berbahaya jika tidak segera diatasi dimana pada pasien dengan hidrosefalus yang tidak terobati selama 10 tahun, peluang untuk sembuh menurun di bawah 50%. Pemasangan selang otak masih menjadi pilihan dunia medis dalam mengobati hidrosefalus, dimana pemasangan selang otak ini dibagi menjadi 3 yaitu Ventriculoperitoneal shunt, Ventriculoatrial Shunt, serta External Ventricular Drainage. Ventriculoperitoneal shunt masih menjadi *gold standard* dalam mengatasi hidrosefalus sedangkan Ventriculoatrial shunt dengan potensi komplikasi yang lebih berbahaya tetap menjadi alternatif utama untuk pasien yang memiliki kontraindikasi terhadap VPS.

Penelitian ini diharapkan dapat memberikan informasi lebih mengenai profil klinis dan laboratoris pada pasien pediatri dengan hidrosefalus yang terpasang VAS. Tipe penelitian ini merupakan studi deskriptif retrospektif dengan menggunakan data sekunder. Data-data pasien diambil dari rekam medis dari setiap subjek penelitian ini. Penelitian ini dilaksanakan pada bulan November 2021-November 2022 dengan jumlah subjek penelitian sebanyak 15 pasien pediatri yang melakukan prosedur pemasangan VA Shunt pada periode Januari 2019-Desember 2020. Variabel pada penelitian ini adalah umur, jenis kelamin, riwayat pengobatan dan operasi, total GCS masing-masing pasien, gejala klinis, serta hasil pemeriksaan CSF tiap-tiap pasien.

Hasil penelitian yang didapatkan dari 15 pasien yang memenuhi kriteria adalah subjek penelitian ini didominasi oleh pasien dengan rentang usia 12 bulan – 2 tahun (46.7%) serta berjenis kelamin laki-laki (66.7%). Mayoritas pasien pernah melakukan operasi VP Shunt atau

EVD sebelum dilakukan VA Shunt (53.3%). Pada saat pertama kali masuk rumah sakit, sebagian besar pasien memiliki total GCS 14-15 atau compos mentis (66.7%), selama dirawat mayoritas pasien mengalami 2 gejala klinis (40%), mayoritas pasien mengalami malfungsi shunt (53.3%) dan hanya sebagian kecil mengalami malposisi shunt (13.3%), muntah-muntah merupakan gejala yang paling sering muncul (53.3%) sedangkan perut kembung dan membesar serta mual-mual dialami oleh sebagian kecil pasien (20%). Mayoritas pasien dalam pemeriksaan CSF ditemukan CSF tidak berwarna (46.7%), jernih (86.7%), tidak ada bekuan (100%), dan pemeriksaan Nonne Pandy positif (80%).

Untuk total sel rata-rata pada CSF pasien adalah 58.2667, rata-rata level PMN adalah 26.733, rata-rata MN adalah 73.2667, rata-rata kadar konsentrasi glukosa sebesar 41.86, dan rata-rata konsentrasi protein di CSF pasien adalah 846.32.

ABSTRAK

PROFIL LABORATORIS DAN KLINIS PASIEN PEDIATRI HIDROSEFALUS DENGAN VENTRICULOATRIAL SHUNT DI RSUD DR. SOETOMO

Raka Ibrahim Faiz Syafrisal

Latar Belakang: Hidrosefalus merupakan sebuah kondisi abnormal multifaktorial dimana terjadi penumpukan cairan serebrospinal yang dapat diidentifikasi dengan perbesaran kepala. Hidrosefalus dapat dibagi menjadi beberapa klasifikasi dengan etiologic, hasil pemeriksaan, dan tatalaksana yang berbeda.

Tujuan: Untuk memahami serta menganalisis hasil pemeriksaan klinis dan laboratoris pasien pediatri dengan hidrosefalus yang terpasang Ventriculoatrial Shunt.

Metode: Penelitian ini merupakan tipe penelitian deskriptif retrospektif dengan menggunakan data sekunder yang diambil dari rekam medis pasien untuk mengetahui demografi, riwayat pengobatan dan operasi, kondisi umum dan klinis, serta hasil pemeriksaan laboratoris.

Hasil: Hasil penelitian yang didapatkan dari 15 pasien yang memenuhi kriteria adalah subjek penelitian ini didominasi oleh pasien dengan rentang usia 12 bulan – 2 tahun (46.7%) serta berjenis kelamin laki-laki (66.7%). Mayoritas pasien pernah melakukan operasi VP Shunt atau EVD sebelum dilakukan VA Shunt (53.3%). Pada saat pertama kali masuk rumah sakit, sebagian besar pasien memiliki total GCS 14-15 atau compos mentis (66.7%), selama dirawat mayoritas pasien mengalami 2 gejala klinis (40%), mayoritas pasien mengalami malfungsi shunt (53.3%) dan hanya sebagian kecil mengalami malposisi shunt (13.3%), muntah-muntah merupakan gejala yang paling sering muncul (53.3%) sedangkan perut kembung dan membesar serta mual-mual dialami oleh sebagian kecil pasien (20%). Mayoritas pasien dalam pemeriksaan CSF ditemukan CSF tidak berwarna (46.7%), jernih (86.7%), tidak ada bekuan (100%), dan pemeriksaan Nonne Pandy positif (80%). Untuk total sel rata-rata pada CSF pasien adalah 58.2667, rata-rata level PMN adalah 26.733, rata-rata MN adalah 73.2667, rata-rata kadar konsentrasi glukosa sebesar 41.86, dan rata-rata konsentrasi protein di CSF pasien adalah 846.32.

Kesimpulan: Keputusan pemasangan Ventriculoatrial Shunt pada pasien pediatri dengan hidrosefalus sangat beragam dan berbeda. Beberapa pasien memiliki keluhan abdominal berupa muntah, mual, serta perut kembung sementara beberapa pasien lain memiliki kegagalan mekanik shunt dan malposisi shunt. Selain itu, terdapat perbedaan pada hasil pemeriksaan CSF pasien.

Kata Kunci: Kesehatan Anak, Hidrosefalus, Pediatri, Ventriculoatrial Shunt

ABSTRACT

LABORATORY AND CLINICAL PROFILE OF PEDIATRIC HYDROCEPHALUS PATIENTS WITH VENTRICULOATRIAL SHUNT IN RSUD DR. SOETOMO

Raka Ibrahim Faiz Syafrisal

Background: Hydrocephalus is a multifactorial abnormal condition characterized by a build-up of cerebrospinal fluid and an enlarged head. Hydrocephalus is classified into numerous types based on its etiology, examination results, and management.

Objective: To comprehend and analyze the clinical and laboratory findings of a pediatric hydrocephalus patient with a Ventriculoatrial Shunt.

Method: This is a retrospective descriptive study in which secondary data from patient medical records is used to assess demographics, the history of treatment and surgery, general and clinical conditions, and laboratory examination results.

Result: The research results obtained from 15 patients who met the criteria showed that the subjects of this study were dominated by patients with an age range of 12 months–2 years (46.7%) and male patients (66.7%). The majority of patients had undergone a VP shunt or EVD surgery prior to a VA shunt (53.3%). At the time of admission to the hospital, most of the patients had a total GCS of 14–15 or compos mentis (66.7%), and while being treated, the majority of patients experienced 2 clinical symptoms (40%), the majority of patients experienced shunt malfunction (53.3%), and only a few small patients experienced shunt malposition (13.3%). Vomiting was the most common symptom (53.3%), while abdominal distention and enlargement and nausea were experienced by a small proportion of patients (20%). The majority of patients on CSF examination found colorless CSF (46.7%), clear (86.7%), no clots (100%), and positive Nonne Pandy examination (80%). The average total cells in the patient's CSF were 58.2667, the average PMN level was 26.733; the average MN was 73.2667; the average glucose concentration was 41.86; and the average protein concentration in the patient's CSF was 846.32.

Conclusion: The decision to insert a Ventriculoatrial shunt in a pediatric hydrocephalus patient varies considerably. Some patients report complaints of abdominal pain, nausea, and bloating, while others report mechanical shunt failure and shunt malposition. Furthermore, there are discrepancies in the patient's CSF examination results.

Keywords: Child Wellbeing, Hydrocephalus, Pediatric, Ventriculoatrial Shunt

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