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PHARMACY UNIT • HOSPITAL BAHAGIA ULU KINTA

[Available online at <http://hbuk.moh.gov.my>]



AUTISM IS NOT A DISABILITY, IT'S A DIFFERENT ABILITY

WHAT IS AUTISM SPECTRUM DISORDER?

Autism Spectrum disorder (ASD) is a lifelong complex developmental difficulty that affects how an individual relates, communicates and interacts with other people as well as how they perceive the world around them. It is a spectrum disorder in which their symptoms and severity vary widely across the core characteristic symptoms. The core areas affected include:

- Deficits in language and communication
- Impairments in socialization and social interactions
- Undeveloped cognitive and adaptive functioning
- Restricted repetitive and stereotyped patterns of behavior and interests

Did you know... (1-2)

According to Centre of Disease Control (CDC) in United State,
1 in 69 3 to 17 year olds in the world have **AUTISM**

Approximately **9,000**
children in **Malaysia** were born with **AUTISM**

BOYS ARE 4 X
More likely to have **AUTISM**

Though autism can be reliably diagnosed as early as **age 2,**
Most children were still being diagnosed **after age 4**

1. Autism Facts and Figures . <https://www.autismspeaks.org/autism-facts-and-figures>
2. Team N. Autism . NASOM 2018 <https://www.nasom.org.my/autism/>



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II WHAT CAUSES ASD?

To date, the exact cause of ASD remains unknown. Research suggests that few factors play significant roles:



Genetic factors

Families who have one child with autism have an increased risk of having another child with the disorder.



Advanced age of parents

Older parents are more likely to have autistic children than younger parents according to several studies.



Extremely preterm babies

Babies born before 26 weeks of gestation may have a greater risk of autism spectrum disorder.



Other disorders

Children with certain medical conditions such as fragile X syndrome, tuberous sclerosis and Rett syndrome have a higher than normal risk of autism spectrum disorder or autism-like symptoms.

MYTHS

Autism can be caused by vaccines!



Babies are vaccinated before age of 2 to protect from dangerous infections: measles. Meanwhile, symptoms of ASD are usually observed around 2 years old. This leads to some suspect that ASD is related to vaccinations, or speculate that Thimerosal (mercury type preservative) is the cause.

TRUTH ⁽³⁾



- Evidence shows **NO CORRELATION** between vaccine and ASD development.
- The WHO Global Advisory Committee on Vaccine Safety concluded that **NO EVIDENCE OF MERCURY TOXICITY** in infants, children or adults exposed to thiomersal in vaccines.

3. Thimerosal and Vaccines [Internet]. Fda.gov. 2018.

III CHARACTERISTICS & SYMPTOMS

In autism, these symptoms begin in early childhood, persist and interfere with daily living.

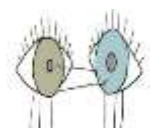
Social communication challenges

Children and adults with autism have difficulty with verbal and non-verbal communication. They may not understand/ appropriately use:

- Spoken language (around 1/3 of people with autism are nonverbal)
- Gestures
- Eye contact
- Facial expressions
- Tone of voice
- Expressions not meant to be taken literally

Restricted and repetitive behaviors

- Repetitive body movements
e.g. rocking, spinning, running back & forth
- Repetitive motions with objects
e.g. spinning wheels, shaking sticks
- Staring at lights or spinning objects
- Ritualistic behaviors
e.g. lining up objects, repeatedly touching objects in a set order
- Narrow or extreme interests in specific topics
- Hard to adapt on changes
e.g. same daily schedule, meal menu, clothes, route to school



IV WHEN SHOULD YOU SEEK HELP ?

If your child meets any of the following red flag behaviours ⁽⁴⁾:

RED FLAG BEHAVIOURS

National Institute of Child Health & Human Development (NICHD)

No gestures (finger point, wave, grasp) by 12 months.

No single words by 16 months.

No 2 word phrases by 24 months

Any loss of language skill at any age.

RED FLAG BEHAVIOURS

Robins, Fein, Barton, & Green, 2001

1. Does not point to show interest in something.
2. Does not respond when name is called.
3. Does not show interest in other children.
4. Does not bring objects to adults.
5. Does not look at objects when adults point to them.
6. Does not imitate adult's movements.



Early detection and starting of intervention is crucial to ensure effective improvement in ASD children's development and learning process in their future.

4. Early Autism Project. Diagnosing A Child With Autism. 2018; <https://www.autismmalaysia.com/what-is-autism>.

V MANAGEMENT OF AUTISM (5-7)

There is no medicine that can "cure" ASD, however, medical treatments can reduce symptoms of ASD, such as aggression, attention deficit, obsessive behaviours, anxiety or depression.

Only **Risperidone and Aripiprazole (Atypical Antipsychotics)** approved by FDA for autism-related irritability in children. However, more often monitoring is needed for young patients than in adults.



Aripiprazole (6 – 17 y/o)

- Dose: initial 2mg/day, increase by 5mg/day at intervals of no less than 1 week; max: 15mg/day
- Side effects: dizziness, insomnia, akathisia, nausea, vomiting, constipation.
- May be more risk of weight gain in children than in adults



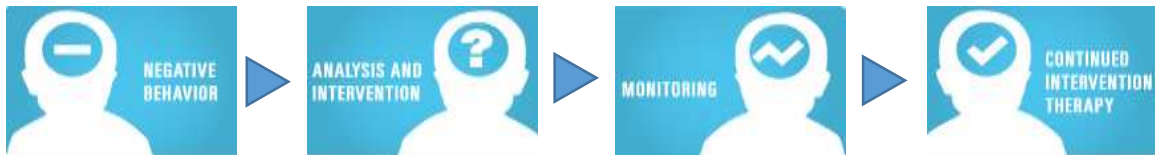
Risperidone (5 – 16 y/o)

- **>5 y/o and < 20kg :**
Initial 0.25mg/day. Maintenance: 0.5mg/day, may increase dose at 2 week intervals or longer to 0.5 – 3mg/day
- **>5 y/o and > 20kg :**
Initial 0.5mg/day. Maintenance: 1mg/day, may increase dose at 2 week intervals or longer to 0.5 – 3mg/ day
- **Side effects:** nausea, constipation, abdominal pain, weight gain, sedation, dizziness



Applied Behavioral Analysis (ABA)

- The currently only evidence-based treatment for ASD through teaching approach
- Basics of ABA – breaking skills down, pairing it with reinforcement and providing sufficient practice for a child to learn new skills and to retain those skills
- Goal of ABA – to increase behaviors that are helpful and decrease behaviors that are harmful or affect learning



Speech, Language and Communication Interventions

a. Naturalistic Approach

Responsive Education and Prelinguistic Milieu Teaching (RPMT) facilitates intentional communication during the prelinguistic period in children with developmental delay. Whereas Reciprocal Imitation Training (RIT) is an imitation intervention developed for young children with ASD.

b. Augmentative and alternative Communication (AAC)

- Unaided AAC consists of nonverbal means of natural communication including gestures and facial expressions.
- Aided AAC requires some additional external support such as a communication board with visual graphic symbols using pictures, line drawings or printed words.

c. Video Modelling

A mode of teaching that uses video recording to provide a visual model of the targeted skill to children with ASD. Types of video modelling include video self-modelling and “video modelling with other as model”.

6. James Robert Brasic, MD, Autism Spectrum Disorder Treatment & Management, Medscape, 2018

7. Autism: the management and support of children and young people on the autistic spectrum: NICE guideline, 2016

Increasing Awareness Translates Into Increasing Acceptance



VI SOCIAL WELFARE FOR AUTISM

School based Autism Services (Government)

PERMATA Kurnia Centre - learning centre for ASD children age 2 to 6 years old

- ✓ pre-school program
- ✓ early intervention program
- ✓ community education

No. 18, Jalan Sentul Perdana, 51000 Kuala Lumpur, Malaysia.

Tel: 03-4026 8200

Website: <http://www.programpermata.my/en/kurnia>

NGO

1. The National Autism Society of Malaysia

No. 4, Jalan Chan Chin Mooi,
Off Jalan Pahang,
53200 Kuala Lumpur,
Malaysia.

Tel: 03-40223799

Website : <http://nasom.my.diip.net/>

2. Perak Autistic Resource Centre

No 2, Persiaran Cempaka Sari 9,
Tmn Cempaka 31400

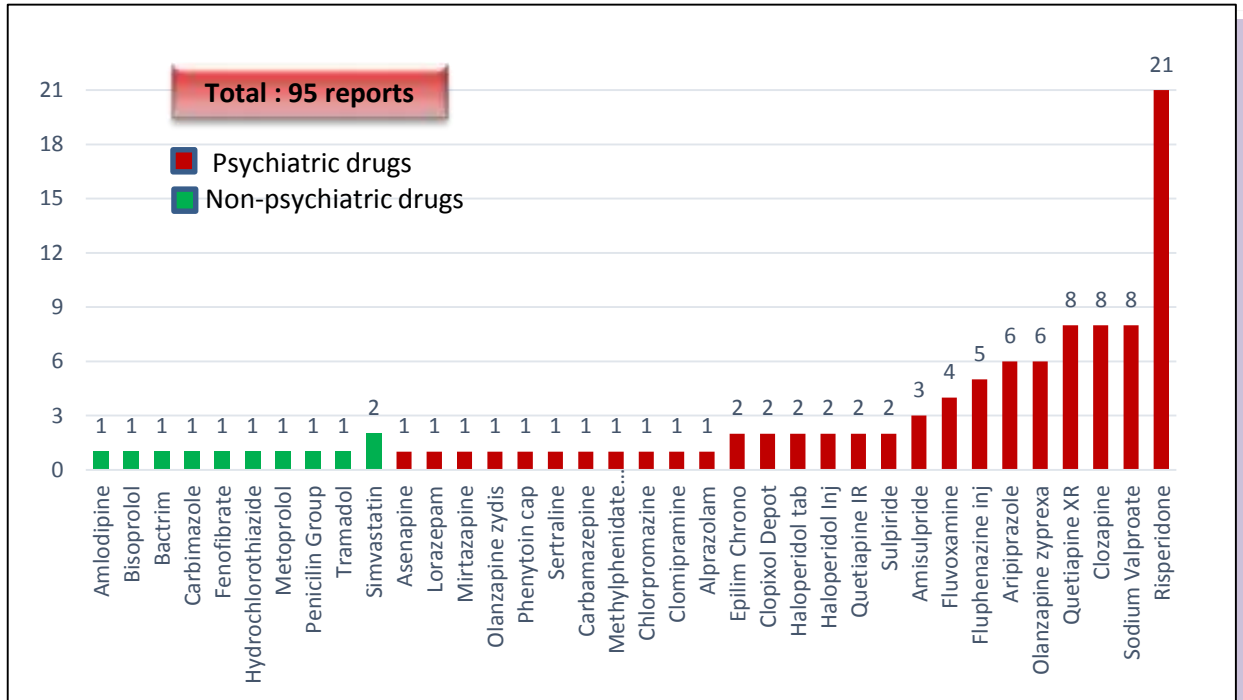
Ipoh MALAYSIA

Tel : 05-583570

ADVERSE DRUG REACTION REPORT 2018

By : Noor Shakila bt Mohd Rodi (UF48), Chow Yan Ning (PRP)

Figure 1 : Total Adverse Drug Reaction Report received categorize by drugs (Jan – Dec 2018)



Total number of adverse drug reaction case reported in 2018 are 95 reports. Statistically, T. Risperidone has the highest ADR report (21 cases) over the year, followed by T. Clozapine (8 cases), T. Quetiapine XR (8 cases), T. Sodium Valproate (8 case), T. Aripiprazole (6 cases) and T. Olanzapine Zyprexa (6 cases). The total number of drugs reported for ADR was 37, and about 27 drugs were psychiatric drugs and 10 drugs were non-psychiatric drugs.



Figure 2 : Most common types of ADR received in 2018.

ADR	REPORTED DRUGS	NO. OF CASES
EPS	T. Risperidone	10
	Fluphenazine Inj.	3
	T. Aripiprazole	3
	T. Quetiapine XR	2
	Zuclopenthixol Depot Inj.	2
	Haloperidol Inj.	1
	T. Haloperidol	1
	T. Sulpiride	1
Total : 23		
Thrombocytopenia	T. Sodium Valproate	5
	T. Quetiapine XR	2
	T. Bactrim	1
Total : 8		
QT prolongation	T. Risperidone	2
	T. Quetiapine XR	1
	T. Amisulpiride	1
	T. Clozapine	1
Total : 5		

At 2018, the most common ADR reported are EPS, thrombocytopenia and QT prolongation. EPS consists of total 23 cases, which is mainly caused by T. Risperidone (10 cases), Fluphenazine Inj. (3 cases) and T. Aripiprazole (3 cases). Meanwhile, thrombocytopenia consists of total 8 cases, mostly caused by T. Sodium Valproate (5 cases) and QT prolongation with a total 5 cases, mainly due to T. Risperidone (2 cases).

The drugs with highest rate of ADR in 2018 are T. Risperidone (21), followed by T. Quetiapine XR (8), T. Clozapine (8) and T. Sodium Valproate (8), T. Aripiprazole (6) and T. Olanzapine Zyprexa (6). The common ADR reported are EPS, thrombocytopenia, QT prolongation, weight gain, neutropenia and seizure.



Figure 3 : Drugs with highest rate of ADR and types of ADR reported in 2018.

DRUG	NO OF CASES	OVERALL ADR
T. Risperidone	21	EPS, nocturnal enuresis, missed menstrual period, headache, amenorrhea, akathisia, QT prolongation, cough, blurred vision, hyponatremia, delayed ejaculation.
T. Quetiapine XR	8	Thrombocytopenia, EPS, weight gain, gastritis, maculo-papular rash (exanthema), muscle ache, QT prolongation, dry mouth.
T. Clozapine	8	Seizure, hypersalivation, QT prolongation, postural hypotension, neutropenia.
T.Sodium Valproate	8	Thrombocytopenia, elevated liver enzyme, weight gain, pedal edema, urticaria, walking broad gait and swinging.
T. Aripiprazole	6	EPS, headache, neutropenia, polyuria.
T. Olanzapine (Zyprexa)	6	EPS, weight gain, bradycardia, neutropenia, hypersalivation.

HYDROCHLOROTHIAZIDE ASSOCIATED SKIN CANCER

By : Chow Yan Ning, Donivald Tham Kam Loy, Koid Sing Cong, Nanthina a/p Punniaseelan

WHAT IS HYDROCHLOROTHIAZIDE?

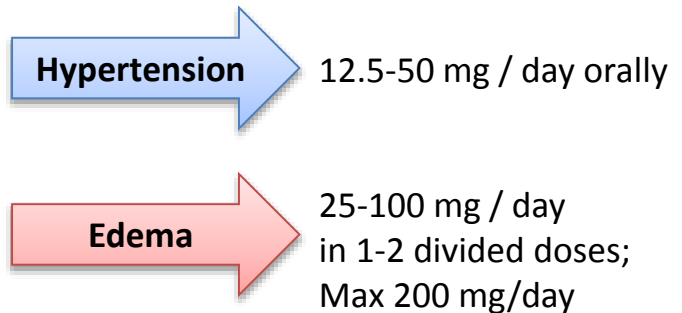
Hydrochlorothiazide (HCTZ) is a medication used to treat high blood pressure. This medication also reduces extra fluid in the body (edema) caused by conditions such as heart failure, liver disease or kidney disease. HCTZ helps in reducing symptoms such as shortness of breath or swelling in ankles or feet.

It belongs to a class of drugs known as diuretics / "water pills." It acts by inhibiting sodium reabsorption in the kidney causing the kidneys to get rid of excess water and salt from the body into the urine. ⁽¹⁾



Example of hydrochlorothiazide available in HBUK

USUAL DOSE & FREQUENCY



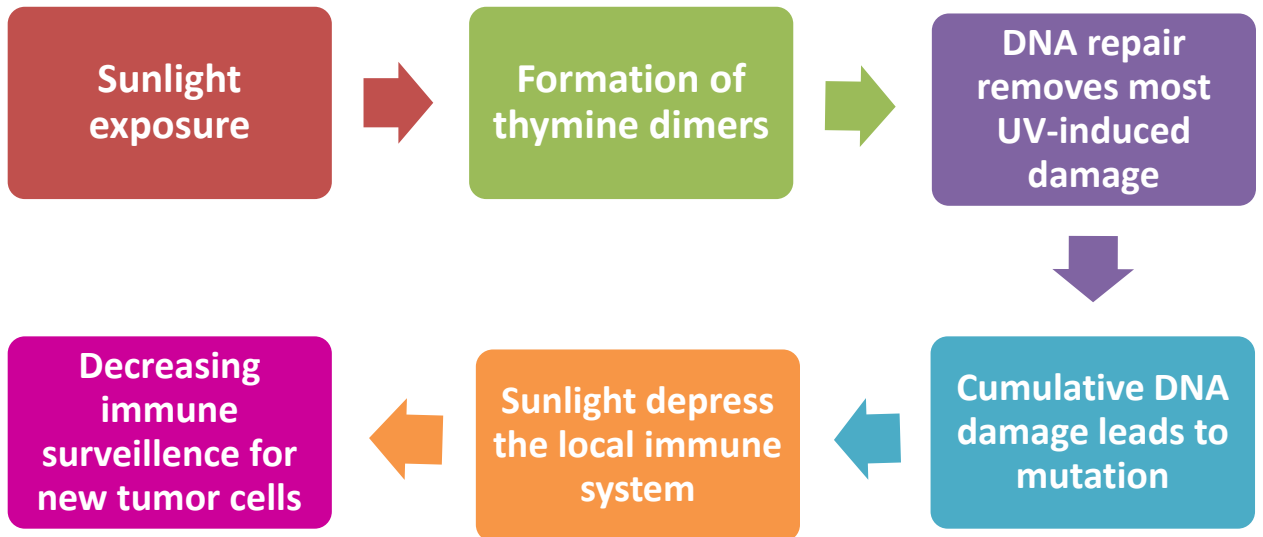
COMMON SIDE EFFECTS ⁽²⁾

- Thirst
- Muscle weakness
- Constipation
- Blurred vision
- Dizziness
- Photosensitivity
- Nausea, diarrhea, vomiting
- Fever
- Rash
- Electrolyte disturbances



1. WebMD. Hydrochlorothiazide. Available from: <https://www.webmd.com/drugs/2/drug-5310/hydrochlorothiazide-oral/details>.
 2. Medscape. Hydrochlorothiazide. Available from: <https://reference.medscape.com/drug/microzide-hydrodiuril-hydrochlorothiazide-342412#10>.

PATHOPHYSIOLOGY OF SKIN CANCER



Basal cell carcinoma (BCC)



Cutaneous squamous cell carcinoma (cSCC)

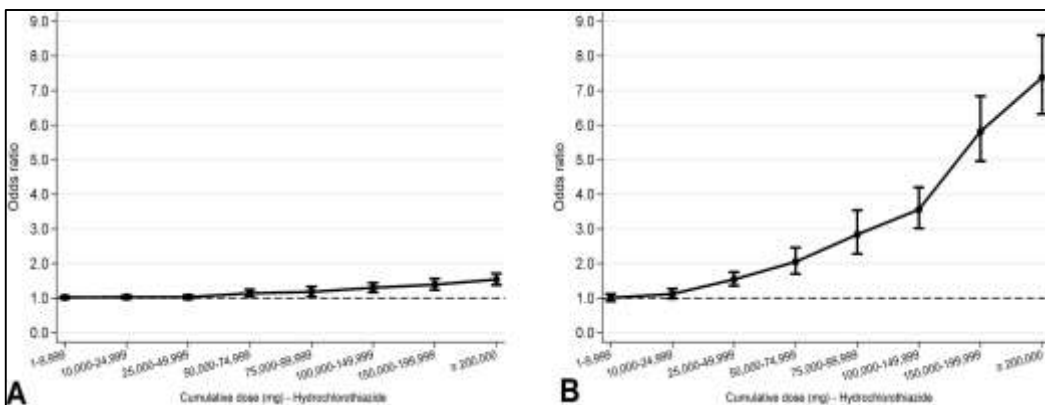
ASSOCIATION OF HCTZ WITH SKIN CANCER

Hydrochlorothiazide use is associated with a substantially increased risk of non melanoma skin cancer (NMSC), especially squamous cell carcinoma (SCC). HCTZ is a potent **photosensitizer**, associated with phototoxic and photoallergic skin reactions upon UV exposure. Hence, it increases the vulnerability of the skin to UV-induced damage that can lead to the development of NMSC. HCTZ has also been shown to increase the incidence of SCC of the lip up to sevenfold in a recent Danish case-control study. ⁽³⁾



STUDY FINDINGS

1. Based on a study carried out by Danish Cancer Registry, high use of hydrochlorothiazide ($\geq 50,000$ mg) was associated with odd ratios (Ors) of 1.29 (95% confidence interval [CI], 1.23-1.35) for BCC and 3.98 (95% CI, 3.68-4.31) for SCC. **There is clear dose response relationship between hydrochlorothiazide use and both BCC and SCC.** ⁽⁵⁾
2. People who took HCTZ daily for at least 6 years were 29% more likely to develop basal cell carcinoma (BCC). They were also almost four times more likely to get squamous cell cancer (SCC). **The risk for skin cancer increased with more years of hydrochlorothiazide exposure.** ⁽⁴⁾
3. HCTZ showed the strongest association with skin cancers on heavily sun exposed sites such as the lower limbs (versus the trunk). ⁽³⁾
4. **Younger individuals** (<age 50 years) showed the **greatest association** between HCTZ use, BCC (OR, 1.91), and cSCC (OR, 42.85). ⁽³⁾
5. **No association between the use of other antihypertensive agents and NMSC risk.** ⁽⁵⁾



Dose response pattern between cumulative HCTZ dose and risk of basal cell carcinoma (A) and squamous cell carcinoma (B). Error bars represent 95% confidence intervals.

PREVENTION !!!

1. **Therapeutic switch** may be especially worthwhile if patients :
 - (i) Has known history of skin cancer or significant risk factors for skin cancer.
 - (ii) Experience excessive occupational sun exposure
2. Proper use of sunscreen with SPF 30 or higher, daily, on all sun exposed skin; additional use of SPF with more prolonged sun exposure
3. Use of UV blocking clothing and umbrellas.
4. Minimizing overall exposure. ⁽⁶⁾



4. Arefa Cassoobhoy M, MPH. Hydrochlorothiazide and Skin Cancer: Should We Be Worried? 2018; Available from: <https://www.medscape.com/viewarticle/891149>.

5. Pedersen SA, Gaist D, Schmidt SAJ, Holmich LR, Friis S, Pottegard A. Hydrochlorothiazide use and risk of nonmelanoma skin cancer: A nationwide case-control study from Denmark. J Am Acad Dermatol. 2018;78(4):673-81.

6. Jonathan Wolfe M. Exploring Hydrochlorothiazide Use and Skin Cancer Risk. 2018.

MAKLUMAN PERTUKARAN JENAMA & PEMBUNGKUSAN UBAT

By: Zulhimi bin Aladdin (UF48), Chow Yan Ning (PRP)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
AMLODIPINE 5MG Tablet	AMCARDIA <i>(Unique Pharmaceutical Laboratories, India)</i>	HOVASC 5 MG <i>(Hovid)</i>

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
SERTRALINE 50mg Tablet	ZOLOFT <i>(Pfizer Inc., New York)</i>	SERLIFT <i>(Ranbaxy (Malaysia) Sdn Bhd)</i>

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
SIMVASTATIN 20MG Tablet	SIVACOL-20 (Noripharma Sdn Bhd)	SIMVASTATIN 20MG (Pharmaniaga)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
L-THYROXINE SODIUM 100MCG Tablet	EUTHYROX (Merck KGaA, Darmstadt, Germany)	THYROSIT (Idaman Pharma Sdn Bhd)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
PARACETAMOL 500MG Tablet	PARACIL (SM Pharmaceuticals Sdn Bhd)	REDAMOL (Royce Pharma MFG Sdn Bhd)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
WOUND IRRIGATION SOLUTION	DERMACYN (Oculus Innovative Sciences, Inc. US)	HYDROCYN (Vigilenz Medical Devices Sdn Bhd)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
SALBUTAMOL 100MCG/DOSE Metered Dose Inhaler	VENTOLIN (GlaxoSmithKline)	BIOMOL (Beximco Pharmaceuticals Ltd)

JENAMA LAMA



JENAMA BARU



NAMA GENERIK	JENAMA LAMA	JENAMA BARU
METHYL SALICYLATE OINTMENT	ANTI-PAIN OINTMENT (Terapeutics Sdn Bhd)	iGESIC OINTMENT (IKOP Sdn Bhd)

KEMASKINI SENARAI UBAT DALAM FORMULARI UBAT HBUK

By : Noor Shakila bt Mohd Rpd (UF48), Chow Yan Ning (PRP)

SENARAI UBAT YANG DITAMBAH

NO.	NAMA UBAT	KATEGORI PRESKRIBER	INDIKASI
1.	Vortioxetine Hydrobromide 10MG Tablet (Brintellix)	A*	Treatment of major depressive episodes in adults.



SENARAI UBAT YANG DIKELUARKAN

NO.	NAMA UBAT	CATATAN
1.	Simvastatin 20MG tablet	Removed from HBUK Drug Formulary (Mesy JKUT 3/2018)

SENARAI UBAT BERTUKAR KATEGORI PRESKRIBER

NO.	NAMA UBAT	CATATAN
1.	Cetirizine HCl 10MG tablet	Change from A/KK to B (Pindaan FUKKM Bil 2/2018)



Formulari Ubat HBUK boleh dimuat turun dari laman web rasmi hospital

<http://hbuk.moh.gov.my>