



DRUG INFORMATICS

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LECTURE 2

A BROAD DEFINITION OF DRUG INFORMATION

تعريف

- **Drug information** is both: a body of **data and information** about medications and a set of **skills and tools** that provide pharmacy professionals with the ability to find, access, understand, interpret, apply and communicate information and acquire knowledge.

تتميز الفرق
بين الـ

Drug information
والـ
Drug literature

- The body of facts and information pertaining to medications is generally referred to as "the drug literature".

A BROAD DEFINITION OF DRUG INFORMATION

تعريف

Drug
Literature:

- The literature of pharmacy and pharmaceuticals encompasses all aspects of drugs, beginning with isolation or synthesis, including physical analysis, bioactivity, toxicology, clinical research, market research, and economic and social considerations.
- The drug literature, reflecting all the individuals who create it and use it, such as chemists, biomedical scientists, all the various health care professionals, attorneys, and patients, is vast and complex.

كل شيء
يختص به واء
مزاولة ماصارلة
isolation
لقد ما طلع
لسوق والناس
بلشت تستخدمه

← ال drug literature لك publication

جداً كبيرة لهيك صار في إنشاء لا

drug information center

لانه اناعم اكي عن معلوماتية تتطور

بشكل vast واهية very complex

← ال drug literature هل فقط يتعامل

فيها ال pharmacist ؟ لا

اي healthcare professional ~~healthcare professional~~

لديم يعرف عنها ، الحامين ~~الحامين~~ ، حتى

ال patient لديم يكون على اطلاع ،

ال chemist لانه من اول ما اعطنا

isolation لدم نزل ال market

Drug Literature

براءة الاختراع - Patents ← تعتبر أيضاً من الـ

A BROAD DEFINITION OF DRUG INFORMATION

- Different kinds of publications are available in the library like journals, abstracting and indexing publications, books, compendia (detailed information about a particular subject), monographs, patents proceedings, reviews, FDA-approved labeling (package inserts), newsletters, promotional literature (refers to print materials that are designed to promote an organization and/or its products and services), government documents, and analysis by consulting services.

Obstracting - يعني فقره بتكفي عن كامل البحث بشكل مختصر
indexing - يعطيني كد الـ publications المستورة
Data base اعطيتها للـ
Key words الـ انا

INFORMATION NEEDS

- The growth in the role played by science in medicine as reflected in: pharmacy والـ medicine

1. The amount of published work.

2. The number of journals.

3. The vast range of drug products in the market.

- It has meant that practioners of medicine and pharmacy, in common with other scientific disciplines, have experienced difficulty in keeping up with advances in knowledge.

INFORMATION NEEDS

- The doctor's response, increasingly, has been to turn to the pharmacist for help.

- Most problems presented by the doctor are concerned with a particular patient, his disease-state and therapy.

- The information requested is usually required within few hours, so that treatment may be changed or started and is needed in the form of data, rather than lists of references or paper reprints.

← اهمية الـ drug information : انا بدني مكان يستطيع الـ clinical pharmacist
انه يجاوب الطبيب على اسئلته ، بحيث يحتاج اي اجابة
within few hours

* بتالي اجابة الصيدلاني على السؤال لا زم تضمن انه هو هـ فعلا " ~~الصيدلاني~~ يسمع
الدكتور صنيح
وايعمل 9

INFORMATION NEEDS

- Production of an answer therefore involves **selection**,^①
interpretation and **evaluation of information**.^③

← بتالي المعلومات الي ممكن الطبيب يسألها لا pharmacist ممكن يكون عن الـ
-8

- The type of information requested may include any of the
① **chemical** or **biological** ^② **properties** of a **compound** or a
③ **comparison of the suitability of several compounds for a**
specific case, where for instance, renal or hepatic disease
may complicate choice.

← هيك انتة بحاجة لي (authentic sources) مصاد موثوقة
لحس بجابون هاي المعلومات -8

DRUG LITERATURE

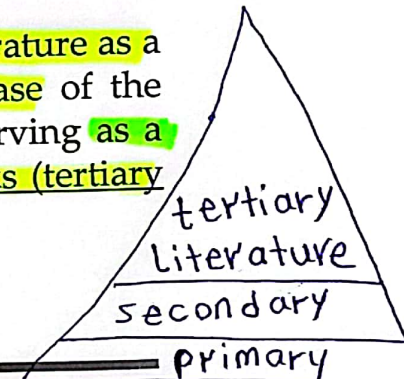
← لاتها جدا عميقة

- The concept of **drug information service** or **drug information center** is an attempt to **document drugs by abstracting information about them**.

- The information about drugs is collected from various sources which are available.

- In **1972 Walton and colleagues** modeled the drug literature as a **pyramid** with the **primary literature** forming the **base** of the pyramid, the **secondary literature** interfacing and serving as a **bridge from the primary literature to reference works (tertiary literature)**.

هذا العالم
رسموها مثل
الهرم



← انه ال Literature تابع ال drug

بهر به ۳ مراحل :-

① primary → previous or original articles اسمها

② secondary → primary بتجمع كل ال
عنا دواء مصين
بتجمعة به
one articles

③ Tertiary → الي هية الكتب او ال
Data base
او ال
reference source

INFORMATION RETRIEVAL SYSTEMS

- As a drug moves along the path from discovery to the market and into worldwide use, data and information about the agent are created and accumulated. When this information is published, its value and usefulness to scientific, professional, and patient communities becomes known.

- Publication of research results at each step of the path is essential.

There is tendency particularly in clinical research, not to publish "negative" results. When this happens we are left with only research that is favorable to the drug, resulting in a skewed picture of the drug's place in therapy.

← drug خلال مرحلة ال isolation حتى يمر بمرحلة دراسة خصائصه الفيزيائية والكيميائية لحد ما ينزل على السوق ممكن يطلع معنا (negative results) مثل (side effect) ، للأسف أحياناً هذه النتائج السلبية لا يتم نشرها ، يعني المجلات بتفضل انه اتتو اطلع النتائج الديجابية فقط ، بتالي لا يتم نشر في ال (Literature) (negative result + positive result)

← بتالي ال drug مداول ما يمر بمرحلة انه احنا اكتشفناه
او اعملنا له isolation ا حد ما ينزل ال market فيه اتته
عندك Data و information تجمعت و اتراكمت ، هاي
المعلومات لازم تخزنها من ضمن هاي ال Literature الي احنا
بنسكي عنها ، هاي المعلومات لازم يكون مطلع عليها اي واحد
ضمن ال Communities سوى كان scientific او patient etc

INFORMATION RETRIEVAL SYSTEMS

١-٢ قسم الى

① → Preclinical drug information
② → Post marketing drug information

- The path of drug development and marketing offers a structure that is useful to scientists and practitioners concerned with compounds of potential therapeutic value.
- The resources themselves are classified as **primary** (original research), **secondary** (indexing and abstracting services), and **tertiary** (textbooks and evaluated information).

← لازم انتة تحصل قبل ما تستعمل على اي فكرة على Patents

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

- i) **AIDSDRUGS**: Published by the US National Library of Medicine, **AIDSDRUG** is a dictionary of chemical and biological agents currently being evaluated in the AIDS clinical trials covered in the companion AIDSTRIALS database.

من هون الى آخر السلايدان بس الحد المطلوب

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

- ii) **Beilstein**: Beilstein, a structure and factual database covering organic chemistry.
- iii) **CAS Registry**: CAS Registry, is a substance database containing structures and chemical names.

① Preclinical Drug information:-

← كيف ممكن الصيدلاني خلال ~~المرحلة~~ المراحل

وين ممكن ينشر as drug literature باي

Research tools اوباي Data base

← انا بدك اطول معلومات فيزيائية وكيميائية

لك preclinical تقسم الي قسمين :-

① اما انا اطول معلومات فيزيائية وكيميائية.

② اوانا اطول عن براءة الاختراع.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

iv) **Chemcyclopedia**: It is an annual supplement to Chemical and Engineering News (C&EN), provides a listing of chemicals, trade names, packaging, special shipping requirements, potential applications and CAS Registry Numbers.

مسجلة
عن

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

v) **ChemFinder**: ChemFinder WebServer is a WWW search engine that works from a single master list of chemical compounds covering all areas of chemistry and also provide information on physical property and two-dimensional chemical structures.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

vi) **Chemical Abstracts**: Chemical Abstracts is a collection of chemical information with nearly 16 million abstracts of journal articles, patents, and other documents.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

vii) **ChemIDplus:** Published by the US National Library of Medicine, it's a web based search engine, that provides free access to structure and nomenclature authority files used for identification of chemical substances cited in National Library of Medicine databases.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

viii) **Chemindex plus:** Database contains 8000 pharmaceutical ingredients linked to 300,000 preparations.

ix) **Ei CompendexWeb:** It's a comprehensive bibliographic database of engineering research literature containing references to over 5000 engineering journals and conferences.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

x) **The Merck Index:** The Merck Index is an encyclopedia of chemicals, drugs, and biological that contains more than 10,000 monographs.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

- xi) **NIST Chemistry WebBook:** The National Institute of Standards and Technology (NIST) Chemistry WebBook provides free access to chemical and physical property data for chemical species via the internet.

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

- xii) **RTECS:** The Registry of Toxic Effects of Chemical Substances (RTECS) is a database of **toxicological information** compiled, maintained, and updated by the National Institute for Occupational Safety and Health (NIOSH).

PRECLINICAL DRUG INFORMATION

1. Physical and chemical data:

- xiii) **The USP Dictionary of USAN (U.S. Adopted Names) and International Drug Names:** The USP Dictionary provides comprehensive information on chemical and brand names of drugs. It includes USAN and International Non-proprietary Names (INN). It also lists drug manufacturers, therapeutic uses, and molecular and graphic formulas.

PRECLINICAL DRUG INFORMATION

2. Patents:

- Through the granting of a patent, the **U. S. Patent and Trademark Office (PTO)** provides intellectual property protection to the inventor for 20 years.

← انه انا احافظ على حقوق السخص الملكية الفكرية للمخترع لمدة 20 سنة

PRECLINICAL DRUG INFORMATION

2. Patents:

هناك ال Data base الى بطول منها معلومات عن جرائد الاختراع

- The Delphion Intellectual Property Network (**IPN**) is a research tool for patent information.
- Derwent World Patents Index (**DWPI**) is a comprehensive database of patent documents published worldwide.

PRECLINICAL DRUG INFORMATION

2. Patents:

- IMS** world Drug Patents International database provides access to the patent status of over 1200 molecules. The database contains information on patents due to expire (over a given time period), patents by therapy class, and patents by country.

← بهم الدكتور له لكُ مكان فقط

Preclinical انه في الـ

Drug information

بقدر اطول معلومات عن الـ

physical chemical ~~data~~ data

+

patents

PRECLINICAL DRUG INFORMATION

2. Patents:

ال office المسؤول عن براءة
الاختراع ؟

- Through the granting of a patent, the (U. S. Patent and Trademark Office (PTO)) provides intellectual property protection to the inventor for 20 years.

انه انا احافظ على حقوق الشخص الملكية الفكرية للمخترع لمدة
20 سنة

المرحلة الأولى
Preclinical - اتفقنا انه الدواء يمر من حيث ال isolation

من حيث ال physical chemical ~~amplitude~~ وامن حيث ال
properties patents

بصدين بدي انزلة على السوق

المرحلة الثانية اننا نزلت على السوق واصار
clinical use هذا راح يكون ال

Literature مختلف هية ال Literature

تنزل تحت مصطلح Phase IV studies

and post-marketing

Drug information

clinical use من وین بتقدر اطول المعلومات من حيث side effect عن ال post marketing ؟

INFORMATION RETRIEVAL SYSTEMS

Phase IV Studies and Post-Marketing Drug Information:

- ✓ During the Phase IV Studies and Post-Marketing Drug Information stages, a thorough literature search is required to find material relevant to the drug's clinical use.
- ② marketing
- ✓ This will require searching the basic bibliographic databases such as Biological Abstracts, Web of Science, Scopus, and PubMed, as well as the patent literature using Patent and Trademark.

هاي انا بطول المعلومات من حيث ال

كيف سمرها اذا مناسب كيف ال effectiveness ... etc

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

- ✓ Office Web Patent Databases. The following bibliographic databases provide access to the full span of life- science periodical literature, including all stages of a compound's development from early brief reports to comprehensive assessments after years of clinical use.

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

- ✓ Office Web Patent Databases:

i) **BIOSIS:** BIOSIS processes approximately 5,50,000 items each year, from primary research and review journals, books, monographs and conference proceedings. It is available in several formats. These include Biological Abstracts/RRM (Reports, Reviews, Meetings), the companion reference to Biological Abstracts.

ايش همة ال Data base ال patent علاقة بي ال

بهاي المرحلة

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

✓ Office Web Patent Databases:

ii) **EMBASE**: EMBASE, the Excerpta Medica database is a biomedical and pharmacological bibliographical database that provides access to medical and drug related subjects from over 4000 biomedical journals from 70 countries. The EMBASE database combined with unique MDLINE records back to 1966 are available in EMBASE.com.

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

✓ Office Web Patent Databases:

iii) **International Pharmaceutical Abstracts**: IPA published semimonthly, is an abstracting/indexing publication which covers all pharmaceutical literature.

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

✓ Office Web Patent Databases:

iv) **MEDLINE**: MEDLINE (Medical Literature Analysis, and Retrieval System Online) contains over 11 million references to journal articles in life sciences with a concentration on biomedicine from 1966 to the present. MEDLINE is available on internet through the National Library of Medicine (NLM) home page at and can be searched free of charge.

PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

✓ Office Web Patent Databases:

v) **Pubmed Central**: Pub med Central (PMC) which encompasses Medline is a web-based archive of journal literature for all of the life sciences. Access to PMC is free and unlimited.

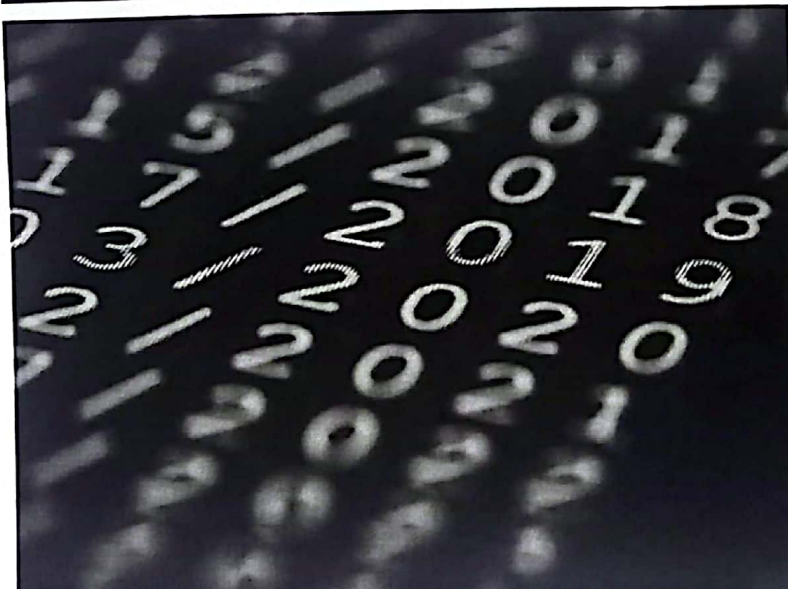
PRECLINICAL DRUG INFORMATION

Phase IV Studies and Post Marketing Drug Information:

✓ Office Web Patent Databases:

vi) **Science Citation Index**: Science Citation Index (SCI) provides access to current and retrospective bibliographical information, author abstracts, and cited references found in various scholarly science and technical journals covering more than 150 disciplines.

هدى
الزغبى



THANK YOU

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