History Taking Hypothetico-deductive Method of Problem-solving

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* Inductive Method:

- A comprehensive history has to be taken.
- Complete physical examination.
- Backed up by a number of investigations.

Full history: Presenting complaint o Systematic enquiry G · Previous medical history T Drugs Social/family PLUS Complete physical examination PLUS Investigations Diagnosis

* Hypothetico- dedutive Method

Guessing & testing.

- Pre- diagnostic interpretation: eg, cardiovascular, psychological rather than physical, acute rather than chronic....

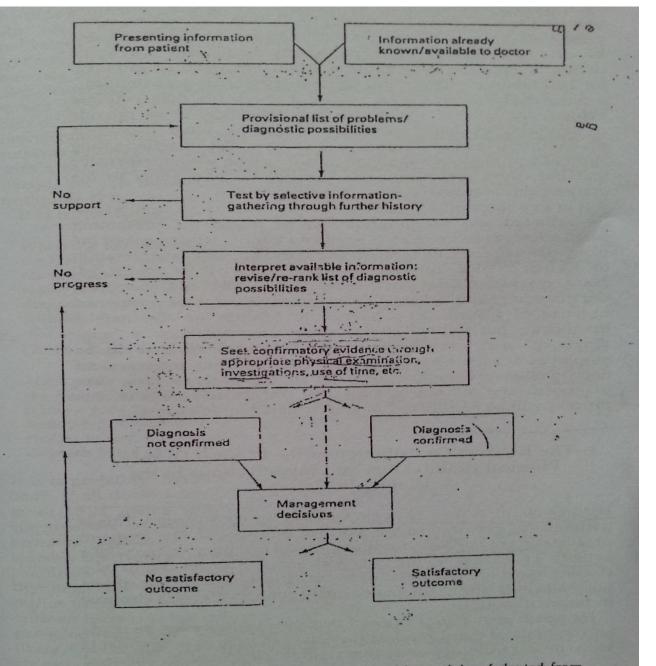
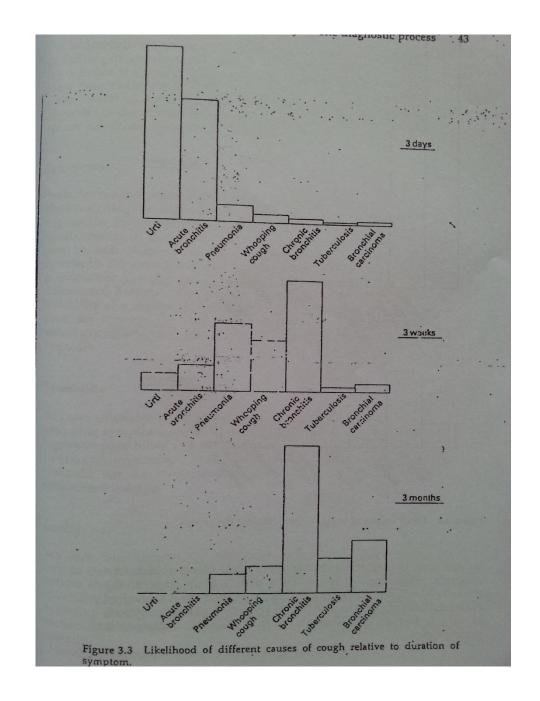
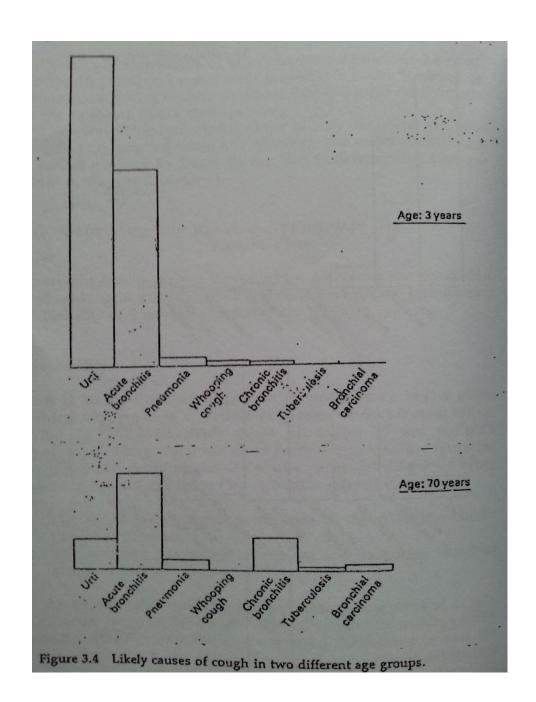


Figure 3.2 Hypotheticodeductive method of problem-solving (adapted from Elstein, Shulman and Sporafka, 1978).

Generating & ranking appropriate diagnostic possibilities

- **Probability**, which is further influenced by:
- I-The crude frequency of occurrence of the particular condition(s) suspected.
- 2- The complex interaction of patient & symptom variables & its effect on point 1.





- Seriousness, (eg, malignant melanoma).
- **Treatability,** (eg, myxedema)
- **Novelty,** (phaeochromocytoma, temporal arteritis, blindness).

DDx list with two distinct categories:

- The first contains the most likely causes (include up to five possibilities)
- The second encompasses the less likely but important to consider possibilities, encompassing the serious & treatable categories (one or two).
- Novelty contributions should feature rarely.

Some common errors:

- Unwarranted fixation on a hypothesis.
- Premature closure of hypothesis generation.
- Rule- out syndrome. (converse), not missing or ruling out diorders of low probability.

Other errors:

- Generation of very unlikely hypotheses (eg, novelties).
- Undue retention of initially appropriate hypotheses which are clearly not sustainable in the light of subsequent information obtained.
- Promotion of unsupportable hypotheses.



- Make use of the stage of (PDI).
- Whether the PDI is helpful or not, clarify the presenting symptom.
- Use checklists.

Checklists to aid generation of likely diagnoses Table 3.1 Anatomical approach Surgical sieve -: Systems approach (e.g. to chest pain) Cardiovascular Skin Congenital Muscle -Acquired: Respiratory r Gastrointestinal Bones Traumatic · § Genitourinary Pleura Infective Musculoskeletal Lungs Inflammatory 7. Neurological Heart Metabolic , Haemopoietic Oesophagus/ Haematological stomach Degenerative Psychological Iatrogenic

- Bear in mind:
- Uncommon manifestations of common conditions are more common than common manifestations of uncommon conditions.
- Simple conditions are caused by simple problems.
- Diverse symptoms & signs are commonly caused by a single disease or entity.
- If all else fails, refer to books journals or consult colleagues.

CASE:

 A 55-year-old man, complained of tiredness of 3 months` duration. He was known to have rheumatoid arthritis affecting the small joints.

- The Triple Diagnosis: physical, social, & psychological. (eg, acne vulgaris)
- Use of TIME as an aid to diagnosis:
- wait & see, low vs. high probability, spontaneous remission.
- Uncertainty,... control it.
- A diagnostic tool, dictated by the particular clinical circumstances.
- eg, drowsy, febrile, irritable infant... URTI, meningitis.

Case I

 A 6 I-year-old widow presents with a history of 'wetting herself' for the previous 5 days because she `can`t get to the toilet on time. She had felt perfectly well' prior to the onset of her present symptomatology. Her medical records reveal she has no history of significant illness & that she is an infrequent attender.

Initial interpretation

- Most likely: UTI
- Less likely but important to consider:
 - a- Cystocele b- Diabetes.

For the following reasons:

- Sudden onset.
- Short duration of symptoms.
- Elderly female patient.
- Previously well.

Case I (cont.)

 It transpired that the patient had frequency of micturition at hourly intervals with some dysuria but no nocturia, haematuria, backache or fever.
 She felt well otherwise. There was no urine loss on coughing & no family history or other stigmata of diabetes.

Case I (cont.), further action

- No physical examination carried out..
- MSU(midstream urine) sent to laboratory.
- Check for glycosuria: absent.
- Antibiotic treatment instituted:
- High probability
- Distressing nature of symptoms
- Explanation given, see next week.
- MSU revealed E.coli infection
- Follow-up MSU revealed sterile urine

Case I (cont.)

- If symptoms had not resolved, &if the MSU result had been -ve...
- Unusual presentation of cystocele
- Psychological causes
- If no.... Refer

Case 2

- A 32-year-old divorcee with 3 children..
- History of having been `well` until 2 months previously:
- Presentation I: Irritability, tiredness, weight loss, dislike of hot weather, increased sweating, palpitations, trembling of hands, increased appetite

- Presentation 2: Irritability, tiredness, increased sweating, weight loss, palpitations, diminished appetite.
- Presentation 3: tiredness, weight loss?, normal appetite.

- Presentation I: thyrotoxicosis, anxiety\depression.
- Presentation2:
- anxiety\depression
- Anaemia
- Thyrotoxicosis
- Carcinoma of breast\cervix
- Pulmonary TB
- Presentation3: ????

Hypothetico-deductive Method Patient's Interview

- Chief Complaint:durationFile information
- The differential diagnosis is based on
- Probability
- Seriousness
- Treatability
- Novelty
- At least 7 DDx

History

- The single most important step
- SOCRATES: (for all complaints)
- Site
- Onset
- Timing, Duration, Frequency
- Character
- Radiation
- Exacerbating & relieving factors
- Severity
- Associated symptoms: pertinent clues...

History (cont.)

- 4 D's: disease, drugs, diet, "dokhan"
- Marital status, level of education, job, alcohol consumption, financial status, insurance, psychological status, sexual activity, social history, family history & genetics,... (Whole patient medicine)

History (cont.)

- Patient centered medicine:
- ABC: Anxiety, Beliefs, Concerns
- **FEFI**: Function, Expectations, Feelings, Ideas
- Why the patient is coming today? (An essential question in each consultation).

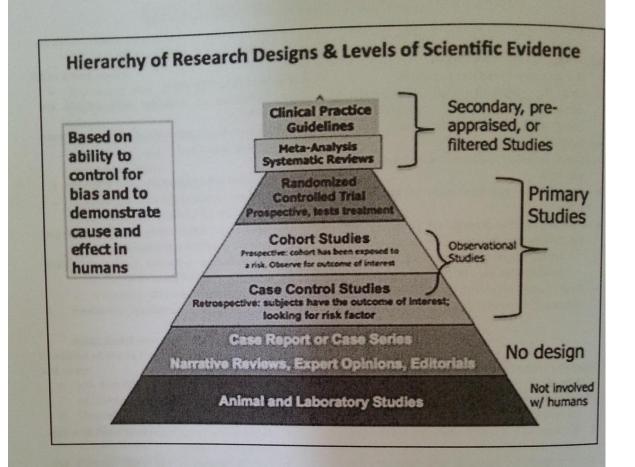
Physical Examination

- General appearance
- Vital signs:
- Temperature
- Respiratory rate
- Heart rate
- Blood pressure
- Focused physical examination: related to the DDx list.

Management: RAPRIOP

- Reassurance
- Advice
- Prescription
- Referral
- Investigations
- Observation
- Prevention

- Patient- doctor interaction: explaining the DDx; the cause, course, & available management options, & sharing all these info with the patient.
- Noting that all of the above is taking into consideration patient's concerns & worries.



PICO Formula

PICO

The acronym used to help formulate a well-defined searchable question.

P

 Patient, population or problem: What are the most important characteristics of the patient and their health status?

1

 Intervention/Exposure: What main intervention are you considering (medical, surgical, preventative)?

C

 Comparison: What are the alternative benchmark or gold standards being considered, if any?

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 Outcome: What is the estimated likelihood of a clinical outcome attributable to a specific disease, condition or injury?

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