Academy of PHYSICAL MEDICINE

Broadcast Summary

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PHARMACOLOGY

With Dr. Nigel Hume

About Nigel Hume

- Trained at Leicester University between 1981 and 1986 and graduated with a Merit in Medicine and Therapeutics.
- Held posts in Paediatrics, Medicine, Geriatrics, Paediatric Respiratory Medicine with Paediatric Oncology, Urology, Surgery, Casualty, Ophthalmology, Obstetric and Gynaecology.
- Full-time GP since 1990, actively involved in teaching and assessing trainee GPs and hospital Doctors since 1994.
- Expert advisor for those embarking on challenging mountain trips in UK, or at high altitude.
- Areas of medical interests are: Allergy and Atopy; Wheeze and Asthma in children and adults; Anxiety disorder; Asperger Syndrome; Care of the elderly; Thyroid disorders; Erectile Disorder; Unexplained fatigue; Eye conditions; Eczema and skin conditions; Memory problems and cognitive decline; Side effects of common medications; Drug interactions; Prostate disease and its assessment; PMS evaluation and treatment; Polycystic Ovarian syndrome; Altitude and mountain medicine.

On GPs

• GPs' views of chiropractic and osteopathic professions are slowly changing. Newer trainees begin to recognise the need for GPs and manual therapists to work in tandem. Complementary health care should be seen as an advantage to the GP (an add-on) rather than as an option when everything else has failed.

• GPs receive financial incentives when they keep to their NICE targets.

Hypothyroidism, hyperthyroidism, and goitre

• When conditions as hypo/hyperthyroidism and goitre are diagnosed, several factors are taken into consideration. A thorough review of the following are needed before a diagnosis can be reached:
    - Medical and family history
    - Risk factors
    - Physical examination
    - Thyroid Stimulating Hormone (TSH) Test
    - T3 or T4
    - FT3 or FT4

Underactive thyroid	Overactive thyroid	Goitre
Symptoms include – • Dry/scaly skin • Dry/brittle hair • Slower reflexes • Slower pulse rate (resting pulse is between 46-50 • Constipated • Lethargic, sluggish	Symptoms include – • Rapid heartbeat • Palpitations/irregular heartbeat • Jumpy reflexes (grade 3) – out of proportion to their anxiety	Symptoms include – • Swelling in the neck / enlarged thyroid • Proptosis (abnormal protrusion of the eyeball) • Dry eyes (this is often blamed on other conditions or age)
• Both conditions are very common among women and often run in families • A thorough review of a patient's medical and family history is done foremost.		• Not always an indication whether it could be hyper- or hypothyroidism

• John Smartt, who specialises in hypothyroidism, cited that TSH is very often normal in underactive thyroid (see his paper, available through the APM website).

• Thyroid problems are seriously underdiagnosed.

• When the examination results are normal, and the patient's medical history does not show any abnormality, TSH testing is still reasonable as basis for reviewing the patient and reaching an accurate diagnosis. If doubt remains, do a T3 and T4 tests, then review the results in 4 to 6 months.

• Patients with a TSH of 12.3 need to start taking Thyroxin. Underactive thyroid cannot be corrected purely through diet and exercise. But there are patients who claimed otherwise.

• There are natural thyroid extracts (not available in the NHS) available in Germany and the Netherlands (a private prescription is sent to the laboratories over there and the measured grains/desiccated thyroid extracts are then delivered).

The Tablet-Avoiding Doctor's take on pharmaceuticals

- Always see the patients before deciding whether or not a prescription can be avoided, given their condition. The aim is to reduce target-driven medicine as much as possible.

- Currently, patients are beginning to challenge pharmaceutical wisdom due to reported adverse events from drugs.

- Hospital admissions are rising due to polypharmacy. Patients who are already on medication are prescribed with other additional drugs which will eventually have knock-on effects on their health. (eg a diabetic on aspirin, statins, and ACE inhibitors who is given additional drugs for arthritis and blood pressure is at high risk of complications).

- GPs should be cautious in giving prescriptions earlier than necessary. (E.g. Some GPs prescribe Metformin to patients who are not yet diabetic after having monitored HbA1C, but only manifests symptoms of "prediabetes").

- Some drugs prescribed for diabetes have been shown to increase cardiovascular complications.

- Challenge the information about drugs that are marketed by big pharmaceutical companies by looking into the Cochrane database and meta-analyses. The latter present evidence-based data that can be used as yard stick in assessing a particular drug.

- GPs should review patients' medications twice a year i.e. ACE inhibitors, diuretics, and cardio drugs that are prescribed together for geriatric patients. The latter who reside in nursing homes are usually on more than 8 medications and GPs used to visit them frequently but have stopped due to manpower shortage.

- Patients are going back to the pharmacy with old/repeat prescription. GPs can review the prescription but since they are not familiar with the case, they do not question it.

- Number Neede to Treat/Benefit: the number of patients who need to be prescribed a drug in order for one to see benefit. With statins this is 37, but will vary as the medical profile of the target group changes.

- Number Needed to Harm: the number of patients who need to be prescribed a drug in order for one to be harmed. With non-steroidal drugs, this is about 50 to 55.

- Non-steroidal drugs should not be prescribed outright for pain relief in patients with low back pain. Start with paracetamol first. Then after proving that it did not work and it is indeed an inflammatory condition, there is a safe reason to give them a non-steroidal.

- Persevere with paracetamol in risky patients (i.e. hypertensive, diabetic, with cardio and coronary artery disease, with renal failure, over-65 years old) but if it fails, add in Codeine (15 milligram) and observe how they tolerate it then make the necessary review.

Prescription drugs	Side effects / Remarks
Aspirin	• The risk of harm from aspirin is 1.6 times that of ibuprofen. • May harm patients (especially those over 55 years old and with family history of heart disease) when taken even in small doses
Bendroflumethiazide (thiazide diuretic)	• First line drug for hypertension, not used as often now but there are patients who are still on it. • Diabetogenic, triggers gout, lowers sodium • Not recommended in patients with middle range blood pressure (142/85); borderline sugar count/prediabetes, and gout • Any drug that is diuretic more likely incites gout (the latter is an independent risk factor for developing cardiovascular disease).
Diclofenac, dihydrocodeine, tramadol, amitriptyline	• Toxic drugs in a group of patients who do not tolerate them well.
Furosemide (diuretic)	• Commonly prescribed in patients with oedema • Potent drug that gets excreted by the kidneys, causes low sodium, lowers blood pressure, incites dehydration
Gabapentin	• Very toxic drug • Originally an anti-epileptic drug which has been licensed for use in neurogenic pain in diabetics, and in patients with complicated pain where nothing works. • One-thirds of the patients benefited and get pain relief while two-thirds had more side effects than benefits.
Metformin	• Adverse side effects include - gastrointestinal conditions like nausea, flatulence, bowel changes, and several patients do not tolerate very well

Non-steroidal anti-inflammatory drugs (eg. brufen, naproxen, diclofenac)	• Risky patients (i.e. diabetic, overweight, hypertensive, with early cardiac disease) who are on prescribed medications and take additional non-steroidal drugs are at high risk of gastrointestinal haemorrhage. • Risk of cardiac failure or renal failure in patients with impaired renal function • Taking 2 non-steroidals together put the patients at high risk of GI bleed. • Can be prescribed to patients with disc herniation provided that their risk profiles are clear. Give them the lowest dose for the shortest amount of time and not put it on repeat (i.e. maximum of 10 days only). **Naproxen** • Naproxen causes fluid retention and reduces renal function. When prescribed to risky patients, it can result into cardiac failure. Common symptoms include breathlessness on exertion, orthopnea, and swollen ankles. (**Note**: Advise patients who have swollen ankles for at least a week and are breathless at night to **immediately** get an appointment with a GP. *Breathless/swollen ankles are keywords to the clinic receptionist and should get priority access to the GP.* **Brufen** • Has the best safety profile among anti-inflammatory drugs but should be used with caution in complicated patients **Diclofenac** • Has one of the worst safety profiles for cardiac events.

Opiates and Co-codamol	• Addictive, patients should not be on them for a long time • Make patients tired, constipated, sluggish, among other side effects • Easier to get patients off these drugs if the side effects are explained to them at the onset • Neil Stanley, a sleep expert, cited that opioids are very bad for sleep quality. Reduced sleep quality causes pain and reduces one's resistance to pain. Getting better sleep is an analgesic.
Pregablin	• When taken in combination with other prescription drugs by complicated patients who have other concomitant illnesses are prone to the side effects such as confusion, dry mouth, blurred vision, agitation, and behavioural problems.
Ranitidine (and other drugs commonly used for the treatment of gastroesophageal reflux like Omeprazole and Domperidone	• Difficult to get the right dose for babies and little children specifically for presumed reflux • Not to be used for treatment of very common illness like reflux (babies and little children grow out of it after they turn 2)
Statins	• About one in a thousand patients would get Myalgia or muscle pains or feel unwell • About 5 percent of patients get muscle pain, but often it is very difficult to sort out and the condition is then attributed to ageing and other causes.
Steroids	• Adversely affect every tissue in the body (brain, eyes, cardiac system, blood vessels, etc.) • Inhaled corticosteroids in small doses are still really important drugs for treatment of asthma. • Tapering down to the lowest dose that controls the patient is the key. • Children should not be on more than 400µg of inhaled corticosteroids (i.e. Becotide) daily. Increase the dose only at such times that patients are problematic (e.g. winter wheezers or summer

	wheezers) then decrease. • There is a correlation between emphysema and previous asthma on high doses of steroids.
Topical non-steroidal	• Less irritant than an oral dose. • Not totally safe. It is absorbed from the surface and can still affect the blood and the stomach as well. • Can be used in patients with superficial tendinopathy who are intolerant of oral drugs.
Sleeping tablets	• Efforts have been directed at determining whether chronically taking prescribed sleeping tablets increase the risk for cognitive decline or Alzeimer's.

Hypertension, high blood pressure, and diabetes

- Framingham studies and those that came out in the 70's-80's suggested that treating hypertension was a cost-effective way of keeping people alive - particularly stopping strokes and cardiac events.

- The mechanism of how practitioners treat patients initially should be challenged, to avoid putting them on 4 different medications for blood pressure.

- Ambulatory monitoring gives a clear picture of whether the medicines given to patients are controlling their blood pressure through the day and whether their high blood pressure readings in the clinic are much higher than when they are away from the clinic (i.e. "white coat syndrome").

- Hypertension in the average middle age adult that warrants medical attention and therapy is when the systolic is persistently above 140-160 and the diastolic is 90. Take other factors into account i.e. renal disease, diabetes, etc.

- The relationship between blood pressure and ill health is not linear.

- Diabetics need to be on statins to reduce their risk for cardiovascular disease. Statins reduce cholesterol and at the same time stabilise the plaques in the coronary arteries.

- Mercury sphygmomanometers are more accurate than electronic machines, which are often erratic or tricked by abnormal pulse (i.e. atrial fibrillation). [1]

- A combination of lifestyle, high sugar, high carb diet, and high calorie intake during the day from fast food and processed food are contributing factors to Type 2 diabetes.

Bronchiolitis

- Winter wheeze in children under two. A seasonal virus that makes children appear asthmatic (i.e. they wheeze and are breathless). Referring patients to an immunologist can be helpful.

- Over the last few years, about 2-5% of the children with this condition were admitted and doctors had difficulty deciding how to best treat them – it is a self-limiting illness and children get better on their own while others need help with oxygen.

- Children born to families with history of asthma and with small birth weight (pre-mature) tend to get the disease early.

Exercise, lifestyle change and mindfulness

- Send the lifestyle message first rather than prescribing medication.

- Explain to individuals that the benefits of engaging in physical activities (i.e. walking) at least three times a week for 40 minutes is as good as taking prescription drugs (i.e. statins or aspirin).

- These days, most of those over 45 years old are on anti-hypertensives. Emphasise that half-a-stone weight loss has the same effects as the average anti-hypertensive.

- Exercise and weight loss will do as much good as the Metformin.

- Cholesterol levels can significantly drop just by purely by exercising.

- Patients should find the diet that fits their ethos, beliefs, and needs best.

- While there is no mechanism by which fat can turn into cholesterol, there is a relationship between the two. Both are synthesised by the liver. 80% of the cholesterol in the body is self-manufactured.

- "Multicoloured" diets are advocated for Alzheimer's, memory and cognitive impairment.

- Cannabis oil is currently not recognised as medicine in the UK, but has been advocated for certain types of cancer and can cause relaxation which may help with pain.

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[1] *Editor's note: As discussed in our broadcast featuring Barry Jacobs, the Microlife Watch BP Home A electronic blood pressure monitor can detect atrial fibrillation*.

• Stress is a much underdiagnosed cause of other real health problems such as high cholesterol, pain, etc. Mindfulness can be an excellent way of addressing these conditions. Physical health is connected/interlinked with mental health.

Conditions that require further medical investigation

- Unusually high cholesterol with no family history: Look for hepatic problems, conduct liver function test, check gamma- glutamyltransferase (GGT) levels. GGT helps the liver metabolise drugs and alcohol, and increases with alcohol consumption, so is a good indicator of over use indicate. A high level would be above 70.

- Isolated rising GGT and not drinking alcohol: Check triglyceride levels and lipid levels. Suspect hypothyroidism and hypercholesterolemia from thyroid.

Takeaway messages

- Be very alert to prescription of anti-inflammatory drugs to patients who are in a risk group (ie diabetic, cardio problems, hypertensive, etc).

- Help patients interact with the GP surgery at by educating them (teach them key words and sentences to use).

About https://thriva.co

- A platform that offers a home finger-prick blood test that lets patients track a range of internal blood markers associated with good or bad health - including cholesterol levels and tests for liver and kidney function.

- After taking the home test (comes with a kit), the blood sample is mailed to Thriva's partner lab. Results are sent back with recommendations – lifestyle changes or advise to seek medical attention if the results are not good.