PCP

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PCP is a form of pneumonia caused by a common organism, *Pneumocystis jiroveci* (previously called *Pneumocystis carinii*), which is a type of fungus. This organism is common throughout the population, but does not cause problems in people with healthy immune systems. However in people with severely damaged immune systems, such as people with advanced HIV infection, the organism can grow in the lungs causing pneumonia. It can also affect the lymph nodes, bone marrow, spleen, liver and the eyes. Illnesses caused by *Pneumocystis* are often called pneumocystosis.

Risk of PCP

People with HIV are at increasing risk of PCP as their CD4 cell count falls. This risk becomes significant below 200, although most cases occur at even lower CD4 cell counts. PCP was a common cause of death among people with AIDS in the early years of the HIV epidemic, and even now about 200 new cases a year are seen in the UK and it can still be fatal, particularly in people who have their HIV diagnosed very late.

HIV treatment, improved treatment for PCP, and the use of antibiotics to prevent PCP causing illness (prophylaxis) now mean that it is rare for PCP to be fatal.

Thanks to effective HIV treatment, PCP is now very rarely seen in this country.

HIV-positive smokers are three times more likely to develop PCP than non-smokers.

Symptoms

Common early symptoms of PCP are shortness of breath and/or fever. Other warning signs include a dry cough and pain or tightness in the lungs. Weight loss, diarrhoea and feeling generally unwell are also possible symptoms of PCP.

Symptoms are often first noticed on exertion, for example whilst running for a bus, but as the condition worsens, shortness of breath can be experienced when doing nothing but relaxing.

Diagnosis

Tests used to diagnosed PCP include chest X-rays, measuring the amount of oxygen in the blood and looking at a sputum sample for PCP organisms. If doctors are still uncertain what is causing the illness, a bronchoscopy may be used. This involves passing a tiny camera into the lungs through the mouth or a nostril. A small tissue sample may also be taken during a bronchoscopy and then examined under a microscope.

Preventing PCP

If your CD4 cell count falls below 350 you will be recommended to start taking HIV treatment. It is very important to start HIV treatment before your CD4 cell count falls to 250 to 200, the point at which you become vulnerable to PCP. If you do not start HIV treatment at this point, or if your CD4 count is at this level or lower when your HIV is diagnosed, you will be recommended to start taking treatment to stop you getting PCP. This is called PCP prophylaxis. The drug that is usually used for PCP prophylaxis is cotrimoxazole (*Septrin*), which is normally taken orally every day (although some clinics may prescribe it three times a week instead).

Dapsone and atovaquone are other oral options. Another option is aerosolised pentamidine which is given once a month using a nebuliser. These options are rarely used and are only offered to people who have severe problems taking *Septrin*.

If you are starting or changing HIV treatment and have a low CD4 cell count you will be recommended to continue taking PCP prophylaxis until your CD4 cell count has risen to above 200 to 250 for at least three months. It is then safe to stop PCP prophylaxis, even if you have had PCP in the past. However, if your CD4 cell count falls to below 250 to 200 you should start prophylaxis again.

There is some evidence that people taking anti-HIV drugs who have an undetectable viral load, even if their CD4 cell count is below 200, have a greatly reduced risk of PCP.

Treating PCP

Cotrimoxazole (*Septrin*) is the standard first choice treatment for PCP. Cotrimoxazole is made up of two drugs: trimethoprim (TMP) and sulphamethoxazole (SMX). The abbreviation TMP-SMX is sometimes used.

Treatment with cotrimoxazole is provided in hospital by injection or continuous drip for the first few days, and then by tablets, normally at home. The total duration of treatment is normally three weeks.

Cotrimoxazole also works against bacteria that can cause other infections in HIV-positive people with very low CD4 cell counts.

In severe cases of PCP it might be necessary to take a steroid. Although steroids can suppress the immune system, they also dampen down inflammation in the lungs caused by PCP.

You may be given oxygen during PCP treatment, normally through a facemask or by assisted ventilation. It's important to rest until you are fully recovered from PCP. Expect to be tired for about two months.

Side-effects of cotrimoxazole

About 50% of people treated with cotrimoxazole experience side-effects, particularly during the intravenous stage. These side-effects include rashes and nausea (feeling sick). More severe side-effects can include blood problems, such as a shortage of white blood cells, and/or platelets, and kidney problems. Severe side-effects are likely to mean that it is necessary to switch to an alternative treatment. These include trimethropin and dapsone, pentamidine, atovaquone, or clindamycin and primaquine.

However, side-effects from the use of *Septrin* to as PCP prophylaxis are rare and tend to be mild. This is because the dose of the drug used for the prevention of PCP is much lower than the dose used to treat PCP.

PCP and HIV treatment

Many cases of PCP in the UK involve people who did not know they were HIV-positive, but have serious immune damage and a low CD4 cell count. It's therefore important to have an HIV test if you think that you might be at risk of HIV.

It is normal for the PCP to be treated first, and then for HIV treatment to be started as soon as the PCP is controlled.

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