A futuristic "plasma jet" that eradicates tooth decay without fillings could be replacing the hated dentist’s drill in as little as three years, it was claimed.

The space-age device fires a beam of electrically-charged oxygen atoms into tooth cavities to obliterate decay-causing bacteria. Traditionally, the same job is done by drilling holes into the tooth that has to be filled.

Unlike the dentist’s drill, the plasma jet is non-invasive and can be used on small cavities. A 35-year-old woman delivered a full-term stillborn baby who, during pregnancy, experienced severe gum bleeding, a symptom of pregnancy-related gingivitis.

Approximately 75% of pregnant women experience gum bleeding due to the hormonal changes during pregnancy. These findings – by Yiping Han, a researcher from Department of Periodontics at Case Western Reserve University School of Dental Medicine – are discussed in an article in the Feb-

uary issue of Obstetrics & Gynecology. The article explains that bleeding in the gums allows bacteria in the mouth to enter the bloodstream and potentially infect a fetus – but can be stopped by the immune system.

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The results of the tests were then used to develop a new treatment for gum disease that could help prevent stillbirths caused by gum disease.

The treatment involves using a plasma jet to destroy the bacteria in the gums, which can then be treated with antibiotics to prevent the bacteria from spreading to other parts of the body.

The treatment has been shown to be effective in preventing stillbirths caused by gum disease in animal models. The researchers hope to start human trials of the treatment in the near future.
Countries in Asia less than average in health care spending

Daniel Zimmermann
DTI

LEIPZIG, Germany: Asian countries have been found to spend less of their GDP's for health care than most other countries in Europe and the US. According to a new health care report by the Organisation for Economic Co-operation and Development (OECD) in Paris, only New Zealand provided more money for health care than the average of all observed countries. Japan, Korea and Australia, however, spent less than the OECD average of 8.9 per cent of GDP.

The US currently spends more on health care than any other country—almost two and a half times greater than the OECD average of US$2,984, adjusted for purchasing power parity, Luxembourg, France and Switzerland also spend far more than the OECD average. At the other end of the scale, health-care expenditure in Turkey and Mexico is less than one-third of the OECD average.

The latest edition of Health at a Glance demonstrates that all the countries observed could do better in providing good quality health care; key indicators presented in the report provide information on health status and the determinants of health, including the growing rates of child and adult obesity, which are likely to drive higher health spending in the coming decades.

Based on new data on access to care, the report demonstrates that all OECD countries provide universal or near-universal coverage for a core set of health services, except the US, Mexico and Turkey.

Jet 'to replace dentist's drill'

The scientists infected dentine from extracted human molars with four strains of bacteria and exposed it to plasma for between six and 18 seconds. The longer the treatment continued, the greater the amount of bacteria that was eliminated.

Lead researcher Dr Stefan Bupf, from Saarland University in Homburg, said: "The low temperature means they can kill the microbes while preserving the tooth. The dental pulp at the centre of the tooth, underneath the dentine, is linked to the blood supply and nerves and heat damage to it must be avoided at all costs."

Baby death linked to mum's gum disease

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First Emirati professor joins Masdar

Dr al Ghaferi has won two Sheikh Rashid awards for Academic Excellence for her undergraduate and postgraduate work. The prize is typically conferred upon several hundred Emiratis per year who have excelled in their studies.

She has also received a fellowship from the US State Department and earned one of six British government research grants from a Dh1.1 million fund while she was employed at UAE University.

Dr John Perkins, the institute’s provost, said Dr al Ghaferi would make “a significant contribution” in both her research and teaching.

“She is also an excellent role model for young people interested in pursuing a career in science and technology,” he said.

There are now 22 faculty members at the institute recruited from universities around the world.