MedBulletin

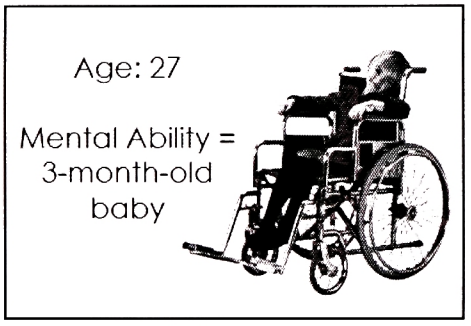
The Ashley Treatment: Forever Young?

MedBulletin by Jacqueline Ho

In early January 2007, Ashley X was introduced to the world. Born with static encephalopathy, severe and irreversible damage of the brain, Ashley has the mental ability of a three-month-old baby, despite being nine-years old. Unable to walk or talk, Ashley will remain a mental infant for the rest of her life. Her parents, who remain anonymous, have opted for treatment that will 'freeze' their daughter from aging. Her doctors are authorized to remove her uterus, her breast buds and inject hormones to restrict her growth.

Ashley's parents emphasize that their actions are in the best interest of their daughter, and that the "central purpose of the treatment is to improve Ashley's quality of life". With the treatment, Ashley will be free of menstrual cramps, and the weight of large and fully developed breasts. Her smaller size will allow her parents to provide more effective care.

George Dvorsky, of the Board of Directors for the Institute for Ethics and Emerging Technologies stated, "the estrogen treatment is not what is grotesque here. Rather, it is the prospect of having a full-grown and fertile woman endowed with the mind of a baby." Agnes Fletcher of the Disability Rights Commission views this as "unnecessary medical treatment" that is a technical solution to a social problem. One of the reasons for the treatment is that Ashley's parent's cannot afford paid caregivers to support their daughter at home. Fletcher states, "[with] such trying circumstances, it is small wonder that they consider desperate measures". Fletcher states that though Ashley's treatment is controversial, the "real scandal" is the failure of developed countries like Britain and the US to provide sufficient support services to ensure all their citizens have access to a decent quality of life.



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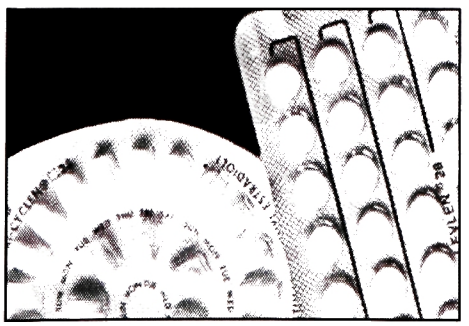
The Pill... for men

MedBulletin by Siddhi Mathur

Researchers at the University of Pennsylvania have treated five HIV patients with a disabled version of HIV. Though there are a multitude of mechanisms in place to control the fertility of women; men, however, have a narrow range of choices. Currently, the main options for male fertility control include abstinence, condoms, or a vasectomy.

Ever since the female pill was first commercialized in the 1960s, researchers have been racing to find a pill for men. Many early experiments and trials tried to develop a male pill using testosterone to trick the brain into turning off sperm production. This is similar to the use of progesterone in women to turn off ovulation. However, the use of testosterone did not prove very effective for stopping sperm production.

Nonetheless, recent research suggests that there is another hormone responsible for the production of sperm: prolactin, a hormone also present in women which is involved in the production of breast milk. Nevertheless, to use as a contraceptive, tablets that inhibit the production of prolactin must be taken once every day in addition to injections or patches of testosterone. Researchers still face challenges, such as the potential side effects of using testosterone. Before the drug can be commercialized, trials assessing efficacy of the drug must be conducted. However, a shortage of male volunteers for trials and studies plagues efforts for further data collection.



Currently, researchers in Australia are testing a recently developed molecule called Adjudin on rats. This molecule works to dislodge the sperm from Sertoli cells, causing the sperm to be ineffective. The goal of this research was to create a non-hormonal molecule that affects a particular step in spermatogenesis. These are promising findings but there is still a daunting amount of research to come before this molecule can be tested on humans.

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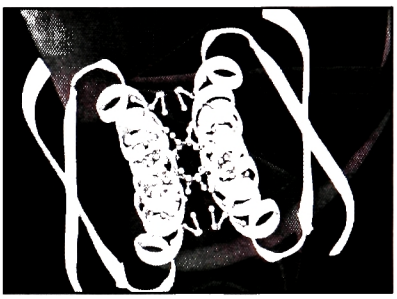
Now you see the tumour, now you don't

MedBulletin by Jacqueline Ho

In healthy cells, the tumour-suppressing gene p53 regulates the cell cycle, activating DNA reparations and preventing faulty DNA from being replicated. Irreparably damaged DNA causes the cell to undergo programmed cell death (apoptosis) induced by p53. In the absence of p53, this fail-safe mechanism is lost and the likelihood of cancer increases.

Studies carried out by two groups of researchers in New York's Cold Spring Harbor Laboratory and the Massachusetts Institute of Technology (MIT) appeared to have found a way to shrink cancerous tumours by reactivating p53. The p53 gene is inactivated or mutated in the majority of human cancers; when reactivated, the p53 gene was able to stimulate a variety of tumours to shrink. In animal experiments, when p53 was only briefly reactivated, a dramatic reduction in tumour size occurred. There were even cases where the tumour was completely eradicated.

The MIT team discovered that responses to p53 activity vary according to the tumour type. While lymphoma cells self-destruct, sarcoma cells age and become unable to divide. The New York team, who worked with a liver tumour, found the aging was caused by an immune response. This causes increased activity of molecules that serve to eliminate cancer cells. Furthermore, the reactivation of p53 caused no damage to normal cells where the gene was not previously expressed. The studies, published in Nature, provided critical genetic evidence that showed constant repression of the p53 gene is essential for tumour survival. These findings also raise hopes of creating a new class of anti-cancer drugs to treat human cancers in the future.



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Informed consent not very informative

MedBulletin by Siddhi Mathur

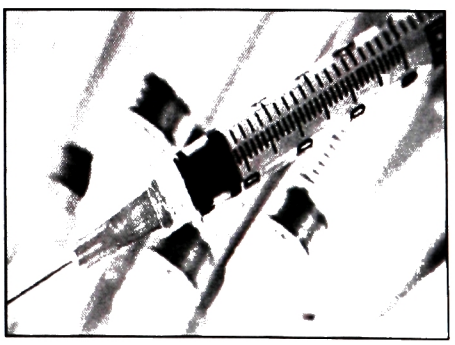
Cancer stricken patients agree to radiation therapy believing that they are receiving the best possible care. Instead, they may be given experimental treatments without compete consent. This occurred in the 1960s in MIT, where physicians used experimental drugs and treatments on cancer patients. They claim, however, that the patients were seeking the treatment because they were left with no hope and no other options.

The question that remains: Are patients today becoming part of drug trials without complete and accurate informed consent? Experts say it is highly unlikely that patients are not asked to sign consent forms that do not include a complete explanation on the type of treatment they are about to receive. However, some of the circumstances that led to the cases at MIT are relevant today.

Just like the '60s, terminally ill patients hold on to every possible thread of hope, even if it means being part of an experimental treatment trial. The reality, however, is that research participation should be a last resort for patients. Also, for extremely ill patients the odds of benefiting from experimental treatments are miniscule. It is the hope and desperation of these patients that makes them vulnerable to exploitation. Patients can be overwhelmed by the complexity and amount of information given to them by their doctor. At this point, it is easy to undermine the risks of the treatment and exaggerate its benefits, especially when the patients and their families have high hopes for a recovery.

From a researcher's point of view, how will advances be made if patients do not volunteer to become part of trials? It is always from a trial, a test, that a concrete treatment is born. Moreover, physicians do their best to inform patients on what it means to be in a research-based path of treatment. Even if the treatment may not hold much benefit for the patient, the data is valuable to researchers, and consequently, to future patients.

Where is the balance? Patients will trust their doctor's advice when participation in a research study is recommended. Nevertheless, it is the doctor's ethical duty to ensure that the patient is completely aware of the risks and realistic benefits of the treatment. It is true that research creates medical advances; but it must not come at the cost of failing to respect participants.



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