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# Indonesian Single Rod Implant: A New Breakthrough

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## Opinion

Implant as a contraceptive device was begun for the clinical trial in 1968 in Santiago, Chile. The tube contained polydimethylsiloxane (silastic or silicon) which was filled by chlormadinone acetate as synthetic gestagen or progestin. However, the trial was stopped due to toxicity in animal experiments [1]. Several years later, six rods implant containing megestrol acetate was run for clinical trial in Chile, India, and Brazil; unfortunately, it stopped because of ectopic pregnancy as consequence of failure [2]. In 1980, there was a trial to compare six- (Norplant®) and two-rod-implant (Norplant-2®) containing levonogestrel (LNG) and continued by the development of Jadena® marketed in Indonesia which was officially accepted by FDA in 1996 [3,4]. Indonesian implant developed single rod marketed as Indoplant® containing 150 mg LNG and Monoplant® consisting of 160 mg LNG. Monoplant® was estimated for 3 years of effectiveness as contraceptive [5]. Therefore, this article would like to present a novel idea in the advancement of Monoplant® for consideration for publication in American Journal of Biomedical Science & Research.

This single rod implant is now undergoing for research in the third stage of clinical trial because prior clinical trial showed good promise in its efficacy. There are some reasons in which monoplant will bring positive impact. Monoplant® as new breakthrough for long-term contraceptive method in Indonesia is expected to be effective and efficient contraception in Indonesia. Levonogestrel which had been used in Indonesia for more than 30 years was proven to be very efficient substance; thus, it could reduce the cost of contraceptive spent especially in universal health coverage era [5].

Indonesia as the fourth largest population in the world had growth rate of 1.49% between 2000 and 2010. Family planning through long term contraceptive method is the key to reduce this growth effectively [5]. In Indonesia, injectable (50.8%) still became more favorable among people using contraception; followed by pill (21.2%) and implants (8.2%) [6]. Therefore, to push the implant prevalence rate in Indonesia, it should be integrated well to culture and society. Since the use of implant is familiar to many people of Indonesia and have been well known to society, it will not be hard to spread the use of Monoplant®.

Monoplant® will only have single rod to insert in the upper arms causing the advantages of insertion and removal easily. Apart from that, the efficacy and safety are similar to Indoplant® (two rod implant that currently marketed nationwide) [7]. In terms of efficacy a quantitative measurement has been done. We measured Levonogestrel concentration in serum up till 6 months of insertion. The result is LNG serum concentration is far above the contraceptive level with mean of 337.5 pg/ml (min 200 pg/ml), giving suitability in Indonesian people and proving its efficacy [8].

We believe that this advancement will bring a new hope to increase the efficacy of national contraception program. Besides, we hope that later on, we will publish the third clinical trial to share a new breakthrough and knowledge in contraceptive technology and method.

## Conflict of Interest

There is no conflict of interest declared and this manuscript has not been published or under consideration for publication elsewhere.

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