

Intra-uterine growth retardation and development of hypertension

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Abstrak

Low birth weight (LBW) is defined as a birth weight of a liveborn infant of <2,500 gram. In developed countries, LBW is commonly caused by preterm birth; while in developing countries, it is mostly due to intrauterine growth retardation. The concept of developmental origins of adult diseases, particularly on late-onset diseases such as hypertension and kidney disease, implies that there is a correlation between intrauterine milieu, intrauterine growth retardation, premature birth and infant feeding. The ‘fetal origin hypothesis’ suggests that metabolic diseases are directly related to poor nutritional status in early life. There is an inverse association between LBW and later risk of hypertension. The pathomechanism that links LBW and hypertension is multifactorial including delayed nephrogenesis, genetic factors, sympathetic hyperactivity, endothel dysfunction, elastin deficiencies, insulin resistance and activation of renin-angiotension system.

.....ayi berat lahir rendah (BBLR) didefinisikan sebagai bayi yang lahir dengan berat <2500 gram. Penyebab BBLR di negara maju umumnya adalah prematuritas, sedangkan di negara berkembang sebagian besar oleh karena gangguan pertumbuhan intra-uterin. Konsep perkembangan penyakit pada usia dewasa khususnya hipertensi dan penyakit ginjal dihubungkan dengan lingkungan intrauterin, gangguan pertumbuhan intrauterin, kelahiran prematur dan nutrisi janin. Hipotesis “The Fetal Origin” menyatakan bahwa penyakit metabolik secara langsung berhubungan dengan status nutrisi yang buruk pada fase awal kehidupan. Terdapat hubungan terbalik antara BBLR dengan risiko kejadian hipertensi di masa mendatang. Patomekanisme hubungan antara BBLR dan hipertensi bersifat multifaktorial yaitu hambatan nefrogenesis, faktor gen, hiperaktiifitas saraf simpatik, disfungsi endotel, defisiensi elastin, resistensi insulin dan aktivasi sistem renin angiotensin.