

無機ヒ素に関する疫学研究のN/LOAEL及びBMCLのまとめ

資料3-2

※ カッコ内は1日推定量の換算に使用した代表値

※黄色は外挿モデル

※ 皮膚病変はNOAELが算出できなかったため、参考として参照用量を記載(灰色セル)

単位はμg/L

文献番号	著者	タイトル、雑誌名等	エンドポイント	NOAEL	LOAEL	BMCL _{0.5}	BMCL ₀₁	BMCL ₀₅
25	Rahman M, Vahter M, Sohel N, Yunus M, Wahed MA, Streetfield PK, Ekstrom EC, Persson LA	Arsenic exposure and age and sex-specific risk for skin lesions: a population-based casereferent study in Bangladesh. Environmental Health Perspectives 114 (12), 1847-1852. 2006a	皮膚病変	< 10.0 (5.0)	10-49 (29.5)	5.2	10.4	54.1
26	Xia Y, Wade TJ, Wu K, Li Y, Ning Z, Le XC, He X, Chen B, Feng Y, Mumford JL	Well water arsenic exposure, arsenic induced skin-lesions and self-reported morbidity in Inner Mongolia. International Journal of Environmental Research and Public Health 6 (3), 1010-1025. 2009	皮膚病変	0-5 (2.5)	5.1-10 (7.55)	0.086	0.38	19.5
29	Ahsan H, Chen Y, Parvez F, Zablotska L, Argos M, Hussain I, Momotaj H, Levy D, Cheng ZQ, Slavkovich V, van Geen A, Howe GR, Graziano JH	Arsenic exposure from drinking water and risk of premalignant skin lesions in Bangladesh: baseline results from the health effects of arsenic longitudinal study. American Journal of Epidemiology 163 (12), 1138-1148. 2006	皮膚病変	0.1-8.0 (4.05)	8.1-40 (24.05)	0.53	0.53	53.8
48	Chen Y, Graziano JH, Parvez F, Hussain I, Momotaj H, van Geen A, Howe GR, Ahsan H	Modification of risk of arsenic-induced skin lesions by sunlight exposure, smoking, and occupational exposures in Bangladesh. Epidemiology 17(4), 459-467. 2006	皮膚病変	0.1-28.0 (14.05)	28.1-113 (70.55)	-	-	-
86	Haque R, Mazumder DN, Samanta S, Ghosh N, Kalman D, Smith MM, Mitra S, Santra A, Lahiri S, Das S, De BK, Smith AH	2003. Arsenic in drinking water and skin lesions: dose-response data from West Bengal, India. Epidemiology 14, 174-182. 2003	皮膚病変	<50 (25.0)	50-99 (74.5)	10.3	13.3	26.2
92	Guo XJ, Liu Z, Huang CJ, You L	2006. Levels of arsenic in drinking-water and cutaneous lesions in Inner Mongolia. Journal of Health, Population and Nutrition 24 (2), 214-220.	皮膚病変	<50 (25.0)	50-199 (124.5)	-	-	-
30	Ferreccio C, Gonzalez C, Milosavljevic V, Marshall G, Sancha AM, Smith AH	Lung cancer and arsenic concentrations in drinking water in Chile. Epidemiology 11 (6), 673-679.2000	肺がん	10-29 (19.5)	30-49 (39.5)	1.17	2.36	12.3
43	Chen C-L, Hsu L-I, Chiou H-Y, Hsueh Y-M, Chen S-Y, Wu M-M, Chen C-J	Ingested arsenic, cigarette smoking, and lung cancer risk: A follow-up study in arseniasis-endemic areas in Taiwan. Journal of the American Medical Association 292 (24), 2984-2990. 2004b	肺がん	10-99 (54.5)	100-299 (199.5)	-	-	-
129	Chi-Ling Chen et al	Ingested arsenic, characteristics of well water consumption and risk of different histological types of lung cancer in northeastern Taiwan. Environmental Reserch, 2010 ;110(5):455-62.	肺がん	25-125 (75) ※40年間の累積曝露	125-250 (187.5)	-	-	-
				100-299.9 (199.95)	≥300 (400)	504	711	1,272
39	Kurttio P, Pukkala E, Kahelin H, Auvinen A, Pekkanen J	Arsenic concentrations in well water and risk of bladder and kidney cancer in Finland. Environmental Health Perspectives 107 (9), 705-710. 1999	膀胱がん	-	-	-	-	-
130	Chi-Ling Chen et al	Arsenic in Drinking Water and Risk of Urinary Tract Cancer: A Follow-up Study from Northeastern Taiwan. Cancer Epidemiol Biomarkers Prev, 19 (1), 101-110. January 2010	膀胱がん	25-125 (75) ※40年間の累積曝露	125-250 (187.5)	69.7 (2,786)	140 (5,585)	713 (28,505)
				50-99.9 (74.95)	100-299.9 (199.95)	92.4	186	952
4	Wasserman GA, Liu X, Parvez F, Ahsan H, Factor-Litvak P, van Geen A, et al.	Water arsenic exposure and children's intellectual function in Araihazar, Bangladesh. Environ Health Perspect. 2004;112(13):1329-33.	神経系 (IQ)	5.6-50 (27.8)	50.1-176 (113.05)	-	-	-
6	Cherry N, Shaikh K, McDonald C, Chowdhury Z.	Stillbirth in rural Bangladesh: arsenic exposure and other etiological factors: a report from Gonoshasthaya Kendra. Bull World Health Organ. 2008;86(3):172-177.	生殖発生 (死産)	10-50 (30)	≥50 (70)	-	-	-
10	Milton AH, Smith W, Rahman B, Hasan Z, Kulsum U, Dear K, et al.	Chronic arsenic exposure and adverse pregnancy outcomes in Bangladesh. Epidemiology. 2005;16(1):82-6.	生殖発生 (自然流産)	-	51-100 (75.5)	-	-	-
11	Rahman A, Vahter M, Ekstrom EC, Rahman M, Golam Mustafa AH, Wahed MA, et al.	Association of arsenic exposure during pregnancy with fetal loss and infant death: a cohort study in Bangladesh. Am J Epidemiol. 2007;165(12):1389-96.	生殖発生/胎児死亡 (Table 4)	167-276 (221.5)	277-408 (342.5)	118	237	1,077
			生殖発生/乳幼児死亡 (Table 5)	164-275 (219.5)	276-408 (342)	42.3	92.6	1,291
14	von Ehrenstein OS, Guha Mazumder DN, Hira-Smith M, Ghosh N, Yuan Y, Windham G, et al.	Pregnancy outcomes, infant mortality, and arsenic in drinking water in West Bengal, India. Am J Epidemiol. 2006;163(7):662-9.	生殖発生 (死産)	50-199 (124.5)	≥200 (274.5)	-	-	-