# ANİ BEBEK ÖLÜMÜ SENDROMU

14. BÖLÜM

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## GİRİŞ

Ani bebek ölümü sendromu (ABÖS) 1 yaş altı bebeğin ani, açıklanamayan bir şekilde ölmesi ve ölüm sebebinin olay yeri inceleme, ayrıntılı otopsi, klinik ve medikal öyküsünün gözden geçirilmesi gibi kapsamlı bir araştırmadan sonra bulunamaması durumudur [(1)]. ABÖS tipik olarak uyku periyodu ile ilişkilidir. Sıklıkla uyku esnasında veya uyku ile uyanma arasındaki geçişte meydana geldiği tahmin edilmektedir [(2)]. Bu nedenle 'beşik' veya 'yatak' ölümü olarak da adlandırılır ancak bu terminoloji günümüzde nadiren kullanılmaktadır. ABÖS %90 altı ay altı bebeklerde görülür ve en sık 2-4 ay arasında gerçekleşmektedir [(3)]. Ölüm genelde gece yarısı ile sabah saatleri arasında gerçekleşir ve hiçbir belirti göstermez.

## TERMİNOLOJİ

ABÖS tanımı, ani beklenmedik bebek ölümü (ABBÖ) ile karışabileceği için tanımlamada olay yeri inceleme, ayrıntılı otopsi ve medikal geçmişin gözden geçirilmesi gerektiği vurgulanmaktadır. ABBÖ; asfiksiye, enfeksiyonlara, metabolik hastalıklara, kardiyak aritmilere, travmaya ve çocuk istismarına bağlı olarak gelişebilir. ABÖS tanısı için evrensel olarak kabul edilmiş bir tanımlama henüz bulunamamıştır. Bu nedenle ABÖS bir dışlama tanısı olmaya devam etmektedir.

## TARİHÇE

Sağlıklı bir bebeğin uyku esnasında ölümü sadece günümüzde görülen bir bulgu olmamakla birlikte binlerce yıl önce vakalar bildirilmiştir. İlk vakalardan İncil'de bahsedilmiştir. Yedinci yüzyılda uyuyan bir bebeğin ölümü cezalandırılabilir suç sayılmakta idi [(4)]. On sekizinci yüzyılda Avrupa'da bebeklere uyku esnasında

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ekartasyon tanısı olmasıdır. ABÖS'ün ölüm nedeni sayılması oldukça subjektif bir tanımlamadır.

## KAYNAKÇA


1. Willinger M, James LS, Catz C. Defining the sudden infant death syndrome (SIDS): Deliberations of an expert panel convened by the National Institute of Child Healthand Human Development. Pediatr Pathol. 1991;11(5):677-84.
2. Kinney HC, Thach BT. The sudden infant death syndrome. N Engl J Med. 2009;361(8):795-805.
3. Fleming PJ, Blair PS, Pease A. Sudden unexpected death in infancy: Aetiology, pathophysiology, epidemiology and prevention in 2015. ArchDis Child. 2015;100(10):984-8
4. Norvenius SG. Somemedico-historicremarks on SIDS. Acta Paediatr Suppl. 1993;82 Suppl 389:3-9.
5. Limerick SR. Sudden in historical perspective. J ClinPathol. 1992;45(11 Suppl):3-6
6. Krous HF. The pathology of sudden infant deaths yndrome: An overview. In: Sudden infant death syndrome: Medical aspects and psychological management 1989. p. 18-47.
7. Elhaik E. A "wear and tear" hypothesis to explain sudden infant death syndrome. Front Neurol. 2016;7:180.
8. Goldstein RD, Trachtenberg FL, Sens MA, et al. Overall postneonatal mortality and rates of SIDS. Pediatrics. 2016;137(1):1-10.
9. Malloy MH, MacDorman M. Changes in the classification of sudden unexpected infant deaths: United States, 1992-2001. Pediatrics. 2005;115(5):1247-53
10. Byard RW, Jensen LL. Is SIDS still a "diagnosis" in search of a disease? Australian J ForensicSciences. 2008;40:85-92
11. Thach BT. Potential central nervous system involvement in sudden unexpected infant deaths and the sudden infant death syndrome. Compr Physiol. 2015;5(3):1061-8
12. Sridhar R, Thach BT, Kelly DH, et al. Characterization of successful and failedau to resuscitation in human infants, including those dying of SIDS. Pediatr Pulmonol. 2003;36(2):113-22.
13. Byard RW. Sudden infant death syndrome. In: Sudden death in the young. 3rd ed. UK: Cambridge University Press, 2010. p. 555-630.
14. Paine SM, Jacques TS, Sebire NJ. Review: Neuropathological features of unexplained sudden unexpected death in infancy: Current evidence and controversies. Neuropathol Appl Neurobiol. 2014;40(4):364-84.
15. Schwartz PJ, Stramba-Badiale M, Segantini A, et al. Prolongation of the QT interval and the sudden infant death syndrome. N Engl J Med. 1998;338(24):1709-14.
16. Jolley SG, Halpern LM, Tunell WP, et al. The risk of sudden infant death from gastroesophageal reflux. J Pediatr Surg. 1991;26(6):691-6
17. Kadhim H, Sebire G, Khalifa M, et al. Incongruent cerebral growth in sudden infant death syndrome. J Child Neurol. 2005;20(3):244-6
18. Kinney HC, Cryan JB, Haynes RL, et al. Dentate gyrus abnormalities in sudden unexplained death in infants: Morphological marker of underlying brain vulnerability. Acta Neuropathol. 2015;129(1):65-80.
19. Trachtenberg FL, Haas EA, Kinney HC, et al. Risk factor changes for sudden infant death syndrome after initiation of Back-to-Sleep campaign. Pediatrics. 2012;129(4):630-8
20. Highet AR, Berry AM, Bettelheim KA, et al. Gut microbiome in sudden infant death syndrome (SIDS) differs from that in healthy comparison babies and offers an explanation for the risk factor of prone position. Int J Med Microbiol. 2014;304(5-6):735-41.
21. Centers for Disease Control and Prevention. DTP vaccination and sudden infant deaths: Tennessee. Morbidity and Mortality Weekly Report. 1979;28(131-2).
22. Huang WT, Chen RT, Hsu YC, et al. Vaccination and unexplained sudden death risk in Taiwanese infants. Pharmacoepidemiol Drug Saf. 2017;26(1):17-25
23. Carmichael EM, Goldwater PN, Byard RW. Routine microbiological testing in sudden and unexpected infant death. J Paediatr Child Health. 1996;32(5):412-15.

24. Chacon MA, Tildon JT. Elevated values of tri-iodothyronine in victims of sudden infant death syndrome. J Pediatr. 1981;99(5):758-60
25. Hakeem GF, Oddy L, Holcroft CA, et al. Incidence and determinants of sudden infant death syndrome: A population-based study on 37 million births. World J Pediatr. 2015;11(1):41-7.
26. Kleemann WJ, Weller JP, Wolf M, et al. Heavy metals, chlorinated pesticides and polychlorinated biphenyls in sudden infant death syndrome (SIDS). Int J Legal Med. 1991;104(2):71-5
27. Mitchell EA. Wrapping a cotmattress in plasticdoes not explain the continuing fall in SIDS mortality. Eur J Pediatr. 2008;167(2):251-2
28. Burnell RH, Byard RW. Are these really sids deaths? Not by definition. J Paediatr Child Health. 2002;38(6):623-4; author reply 4-5.
29. CDC Centersfor Control and Prevention. The sudden, unexplained infant death investigation (SUIDI) 2016.
30. Byard RW. Sudden infant death syndrome. In: Sudden death in the young. 3rd ed. UK: Cambridge University Press, 2010. p. 555-630.
31. Mitchell E, Krous HF, Donald T, et al. An analysis of the usefulness of specific stages in the pathologic investigation of sudden infant death. Am J Forensic Med Pathol. 2000;21(4):395-400.
32. Wedgwood RJ. Session 1. In: Sudden and unexpected death in infancy (cotdeaths). EdsCamps FE, Carpenter RG. Baltimore: Williams and Wilkins, 1972. p. 22-8.
33. Spinelli J, Collins-Praino L, Van Den Heuvel C, et al. Evolution and significance of the triple risk model in sudden infant death syndrome. J Paediatr Child Health. 2017 Feb;53(2):112-15.
34. Filiano JJ, Kinney HC. A perspective on neuropathologic findings in victims of the sudden infant death syndrome: The triple-risk model. Biol Neonate. 1994;65(3-4):194-7.
35. Trachtenberg FL, Haas EA, Kinney HC, et al. Risk factor changes for sudden infant death syndrome after initiation of Back-to-Sleep campaign. Pediatrics. 2012;129(4):630-8.
36. Jorgensen T, Biering-Sorensen F, Hilden J. Sudden infant death in Copenhagen 1956-1971. III. Perinatal and perimortal factors. Acta Paediatr Scand. 1979;68(1):11-22.
37. Jonville-Bera AP, Autret-Leca E, Barbeillon F, Paris-Llado J, & French Reference Centersfor SIDS. Sudden unexpected death in infants under 3 months of age and vaccination status — A case-control study. Br J Clin Pharmacol. 2001;51(3):271-6.
38. Neubauer J, Lecca MR, Russo G, et al. Post-mortem whole-exome analysis in a large sudden infant death syndrome cohort with a focus on cardiovascular and metabolic genetic diseases. Eur J Hum Genet. 2017;25(4):404-9.
39. Duncan JR, Paterson DS, Hoffman JM, et al. Brain stem serotonergic deficiency in sudden infant death syndrome. JAMA. 2010;303(5):430-7.
40. Paterson DS, Belliveau RA, Trachtenberg F, et al. Differential development of 5-HT receptor and the serotonin transporter binding in the human infant medulla. J CompNeurol. 2004;472(2):221-31.
41. Hunt CE. Gene-environment interactions: Implications for sudden unexpected deaths in infancy. Arch Dis Child. 2005;90(1):48-53.
42. Mitchell EA, Milerad J. Smoking and the sudden infant death syndrome. Rev Environ Health. 2006;21(2):81-103.
43. Fleming P, Blair PS. Sudden Infant Death Syndrome and parental smoking. Early Hum Dev. 2007;83(11):721-5.
44. Li Z, Zeki R, Hilder L, et al. Australia's mothers and babies 2010. Perinatal statistics series no. 27. Cat no. PER 57. Canberra: ANPEaS, Ed Unit, 2012.
45. Duncan JR, Paterson DS, Kinney HC. The development of nicotinic receptors in the human medulla oblongata: Inter-relationship with these rotonergic system. Auton Neurosci. 2008;144(1-2):61-75.
46. Hellstrom-Lindahl E, Gorbounova O, Seiger A, et al. Regional distribution of nicotinic receptors during prenatal development of human brain and spinal cord. Brain Res Dev Brain Res. 1998;108(1-2):147-60.
47. Kandall SR, Gaines J, Habel L, et al. Relationship of maternal substance abuse to subsequent sudden infant death syndrome in off spring. J Pediatr. 1993;123(1):120-6.
48. Strandberg-Larsen K. Maternal alcohol-use disorder is associated with increased risk of sudden infant death syndrome and infant death from othe rcauses. Evid Based Nurs. 2014;17(2):46-7.

49. Standfast SJ, Jereb S, Aliferis D, et al. Epidemiology of SIDS in upstate New York. In: Sudden infant death syndrome. EdsTildon JA, Roeder LM, Steinschneider A. New York: Academic Press, 1983. p. 145-59.
50. Peterson DR. The epidemiology of sudden infant death syndrome. In: Sudden infant death syndrome: Medical aspects and psychological management. 1989. p. 3-16.
51. Mitchell EA, Freemantle J, Young J, et al. Scientific consensus forum to review the evidence underpinning there commendations of the Australian SIDS and Kids Safe Sleeping Health Promotion Programme-October 2010. J Paediatr Child Health. 2012;48(8):626-33.
52. Byard RW, Beal SM. Gastric aspiration and sleeping position in infancy and early childhood. J Paediatr Child Health. 2000;36(4):403-5.
53. Patton C, Stiltner D, Wright KB, et al. Do nurses provide a safe sleep environment for infants in the hospital setting? An integrative review. Adv Neonatal Care. 2015;15(1):8-22.
54. Li DK, Petitti DB, Willinger M, et al. Infant sleeping position and the risk of sudden infant death syndrome in California, 1997-2000. Am J Epidemiol. 2003;157(5):446-55.
55. Mitchell EA, Thach BT, Thompson JM, et al. Changing infants' sleep position increases risk of sudden infant death syndrome. New Zealand Cot Death Study. Arch Pediatr Adolesc Med. 1999;153(11):1136-41.
56. Blair PS, Sidebotham P, Berry PJ, et al. Major epidemiological changes in sudden infant death syndrome: A 20-year population-based study in the UK. Lancet. 2006;367(9507):314-19.
57. Byard RW. Is co-sleeping in infancy a desirable or dangerous practice? J Paediatr Child Health. 1994;30(3):198-9.
58. Byard RW, Hilton J. Overlaying, accidental suffocation, and sudden infant death. J Sud Infant Death Synd Infant Mort. 1997;2:161-5.
59. Carlin RF, Moon RY. Risk factors, protective factors, and current recommendations to reduce sudden infant death syndrome: A review. JAMA Pediatr. 2017;171(2):175-80.
60. Hauck FR, Herman SM, Donovan M, et al. Sleep environment and the risk of sudden infant death syndrome in an urban population: The Chicago Infant Mortality Study. Pediatrics. 2003;111(5 Pt 2):1207-14.
61. Combrinck M, Byard RW. Infant asphyxia, soft mattresses, and the "trough" effect. Am J Forensic Med Pathol. 2011;32(3):213-14.
62. Kleemann WJ, Schlaud M, Poets CF, et al. Hyperthermia in sudden infant death. Int J Legal Med. 1996;109(3):139-42.
63. Ponsonby AL, Dwyer T, Jones ME. Sudden infant death syndrome: Seasonality and a biphasic model of pathogenesis. J Epidemiol Community Health. 1992;46(1):33-7.
64. Dwyer T, Ponsonby AL. Sudden infant death syndrome — Insights from epidemiological research. J Epidemiol Community Health. 1992;46(2):98-102
65. Shalala DE, Trujillo MH, Hartz GJ, et al. Regional differences in Indian health 1998-1999. Rockville, MD: US Department of Health and Human Services, 2000.97.
66. Hakeem GF, Oddy L, Holcroft CA, et al. Incidence and determinants of sudden infant death syndrome: A population-based study on 37 million births. World J Pediatr. 2015;11(1):41-7.
67. Grether JK, Schulman J, Croen LA. Sudden infant death syndrome among Asians in California. J Pediatr. 1990;116(4):525-8.
68. Salm Ward TC, Robb SW, Kanu FA. Prevalence and characteristics of bed-sharing among black and white infants in Georgia. Maternal Child Health. 2016;20(2):347-62.
69. King-Hele SA, Abel KM, Webb RT, et al. Risk of sudden infant death syndrome with parental mental illness. Arch Gen Psychiatry. 2007;64(11):1323-30
70. Schechtman VL, Harper RM, Wilson AJ, Southall DP. Sleep state organization in normal infants and victims of the sudden infant death syndrome. Pediatrics. 1992;89(5 Pt 1):865-70.
71. Richardson HL, Walker AM, Horne RS. Minimizing the risks of sudden infant death syndrome: To swaddle or not to swaddle? J Pediatr. 2009;155(4):475-81.
72. Beal S. Sudden infant death syndrome in twins. Pediatrics. 1989;84(6):1038-44.