*Supplementary table 1. Literature overview of combined GH and GnRHa studies. CA: chronological age; BA: bone age; PAH: predicted adult height; AH: adult height; NAH: near adult height; ISS: idiopathic short stature; CPP: central precocious puberty; GHD: growth hormone deficiency; EP: early puberty; SGA: small for gestational age.*

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| --- | --- | --- | --- | --- | --- | --- |
| Author | Design | Treatment | Duration  | Subjects | Before treatmentCA BA Height H-SDS PAH | After treatmentAH (AH-SDS) |
| Balduci 1995(16) | GH+GnRHa | GH 0.033 mg/kg/d 6d/w+ GnRHa 3.75 mg/28d | 2Y | 10 ♀ ISS | 11.6±1.4 | 10.6±0.9 | 127.4±5.5 | -2.7±0.7 | 143.2±3 | 144.6±3(-2.8±0.8) |
| Lanes 1998(17) | GH+GnRHaControls | GH 0.033 mg/kg/d 6d/w+ GnRHa 3.75 mg/28dNo treatment | 2Y | 10 ♂+♀ISS | 11.8±1.311.4±1.0 | 11.2±0.911.0±0.8 | 128.9±7.5128.9±7.8 | −2.4±0.4−2.3±0.4 | 150.7±9.8151.8±10.1 | 151.7±2.4(−2.7±0.6)150.3± 9.8(−2.9±0.8) |
| Pasquino 1999 (10) | GH+GnRHaGnRHa | GH 0.033 mg/kg/d+ GnRHa 3.75 mg/28dGnRHa 3.75 mg/28d | 3Y | 20 ♀ CPP | 10.0±0.57.6±0.2 | 12.0±0.210.4±0.3 | NANA | −1.5±0.2−1.0±0.3 | 152.7±1.7155.5±2.0 | 160.6±1.3(0.2±0.2)157.1±2.5(−0.4±0.3) |
| Mericq 2000 (15) | GH+GnRHaGH | GH 0.033 mg/kg/d+ GnRHa 3.75 mg/28dGH 0.033 mg/kg/d | 3Y | 21 ♂+♀GHD | 14.2±0.514.0±0.4 | 11.5±0.411.0±0.3 | NANA | -4.0±0.4-4.0±0.3 | NANA | NA(NAH -1.3±0.5)NA(NAH -2.7±0.3) |
| Pasquino 2000 (19) | GH+GnRHaGH | GH 0.05 mg/kg/d 6d/w+ GnRHa 100mcg/kg/21dGH 0.005 mg/kg/d 6d/w | 4.5Y | 24 ♂ ISS | 10.2±0.910.7±1.0 | 10.6±1.910.1±1.4 | NANA | NANA | 146.3±5.0145.6±4.4 | 156.3±5.9151.7±2.7 |
| Kamp 2001(25) | GH+GnRHaControls | GH 0.050 mg/kg/d + GnRHa 3.75 mg/28dNo treatment | 3Y | 16 ♀ ISS | 11.5±0.111.5±0.1 | 10.9±0.210.9±0.2 | NANA | -2.0±0.1-2.0±0.1 | 151.8±1.0151.8±1.0 | NA(PAH after 3Y +10.4 cm)NA(PAH after 3Y +2.4 cm) |
| Maniati-Christidi 2003 (21) | GH+GnRHa | GH 0.020 mg/kg/d + GnRHa 3.75 mg/28d | 3Y | 8 ♀ ISS  | 10.5±0.8 | 10.1±1 | 129.3±5 | NA | 148.8±2.6 | 154.5±3.6 |
| Tauber 2003(14) | GH+GnRHaGH | GH 0.020-0.023 mg/kg/d 6d/w+GnRHa 1.5-3 mg/28dGH 0.020-0.023 mg/kg/d | 1-3 Y | 14 ♀GHD  | 11.5±1.511.5±1.6 | 9.5±1.79.7±1.5 | 128.5±7.7126.5±6.4 | -2.6±0.5-2.8±0.8 | 147.8±5.0148.8±5.3 | 152.5±3.1(-1.8±0.5)152.0±6.0(-1.8±1.0) |
| Tuvemo 2004 (30) | GH+GnRHaGnRHa | GH 0.033 mg/kg/d+ GnRHa 6x300 mcg IN/dGnRHa 6x300 mcg IN/d | 2-4Y | 46 ♀ Adopted, EPCPP | 8.4±0.788.2±0.83 | NANA | 132.0±5.5130±7.3 | 0.5±1.10.3±0.9 | NANA | 158.9±5.3(-1.1±0.8)155.8±6.8(-1.6±1.0) |
| Mul 2005(29) | GH+GnRHaGH | GH 1.33 mg/m /d+ GnRHa 3.75 mg/28dGH 1.33 mg/m /d | 3Y | 26 ♂+♀ Adopted, EP | 9.6±0.99.6±0.9 | 11.6±0.810.7±1.1 | 150.0±4.9145.7±7.7 | -0.66±0.9-0.89±1.0 | 146.8±4.8149.8±5.6 | 155.0±5.5(-2.1±0.9)155.0±5.6(-2.1±0.9) |
| Van Gool 2007 (20) | GH+GnRHaControls | GH 0.050 mg/kg/d + GnRHa 3.75 mg/28dNo treatment | 3Y | 32 ♂+♀ISS, SGA | 11.8±0.711.6±0.7 | NANA | 135.1±4.5136.1±4.5 | -2.4±0.5-2.5±0.5 | 157.4±9.8160±10.1 | 161.8±6.3(-2.0±1.0)159.5±5.5(-2.3±0.6) |
| Scalco 2010(31) | GH+GnRHaControls | GH 0.050 mg/kg/d + GnRHa 3.75 mg/28dNo treatment | 2-4.9Y | 10 ♂+♀ SHOX | 11.8±2.111.4±1.4 | NANA | NANA | -2.3±1.3-1.2±0.7 | NANA | NA(-2.4±0.6)NA(-1.2±0.7) |
| Colmenares 2012 (53) | GH+GnRHaGH | GH 0.033-0.050 mg/kg/d+ GnRHa 3.75 mg/28dGH 0.033-0.050 mg/kg/d | 2Y |  32 ♂+♀ISS | 12.0±1.612.2±1.6 | 11.4±0.910.9±1.9 | NANA | -2.3±1.1-2.3±0.9 | 153.7±10160.8±10.2 | NA(NAH -1.6±1.5)NA(NAH -0.1±1.9) |
| Jung 2014(13) | GH+GnRHaGnRHa | GH 0.033 mg/kg/d , 6d/w+GnRHa 75–150 μg/kg/28dGnRHa 75–150 μg/kg/28d | 0.5-4Y | 82 ♀ CPP | 8.8±5.58.7±0.7 | 10.5±0.810.5±0.8 | 133.8±5.4136.9±7.4 | 0.7±0.81.5±1.0 | 154.6±2.5156.6±3.9 | 159.3±5.3(0.0±1.0)160.4±4.2(0.4±0.8) |
| Gyon 2015 (12) | GH+GnRHaGnRHa | GH 0.7 ± 0.1 IU/kg/wk+ GnRHa 3.75 mg/28dGnRHa 3.75 mg/28d | 1-2Y | 85 ♀ CPP | 7.9±0.78.2±0.8 | 10.4±1.310.5±1.1 | NANA | 0.3±1.30.9±1.0 | 147.7±8.0153.7±7.4 | (0.4±1.0)(0.8±1.0) |
| Benabbad 2018 (27) | GH+GnRHaGH | GH 0.050 mg/kg/d+ GnRHa 11.25mg/3MGH 0.050 mg/kg/d | 2.4Y | 35 ♂+♀ISS | 12.1±1.412.1±1.3 | 10.8±1.611.0±1.5 | NANA | -2.5±0.5-2.5±0.5 | -2.7±0.8 (SDS)-2.6±0.9 (SDS) | NA(NAH -2.7 SDS)NA(NAH -2.6 SDS) |
| Lazar 2019 (23) | GH+GnRHaGH | GH 0.050 mg/kg/d+ GnRHa 3.75 mg/28dGH 0.050 mg/kg/d | 2-4Y | 30 ♀ ISS | 11.3±1.212.7±0.8 | -0.6±1.2(SDS)-1.6±0.5 (SDS) | NANA | -2.1±0.7-2.6±0.7 | 146.0±3.1148.1±2.8 | 155.5± 3.3(-1.06±0.5)155.3±3.6(-1.9±0.5) |
| Li 2020 (26) | GH+GnRHa | GH 0.045 mg/kg/d+ GnRHa 3.75 mg/28d | 2Y | 12 ♀ ISS | 12.6±1.1 | 12.8±1.8 | NA | -3.6±1.1 | 146.0±6.5 | 156.8±6.4(-0.33±1.9) |