

**LAMPIRAN ASKEB**

**PRODI PENDIDIKAN PROFESI BIDAN  
JURUSAN KEBIDANAN POLTEKKES KEMENKES YOGYAKARTA  
Jalan Mangkuyudan MJ III/304 Yogyakarta 55143 Telp (0274) 374331**

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**ASUHAN KEBIDANAN BERKESINAMBUNGAN PADA IBU HAMIL  
NY. TL USIA 39 TAHUN G<sub>1</sub>P<sub>0</sub>A<sub>0</sub>AH<sub>0</sub> UK 31 MINGGU DENGAN  
KEHAMILAN RISTI USIA DAN ANEMIA  
DI PUSKESMAS TURI**

Tempat Pengkajian : Kediaman pasien

**Identitas**

	IBU	AYAH
Nama	Ny. Tl	Tn. W
Umur	39 tahun	43 tahun
Agama	kristen	Kristen
Suku/Bangsa	Jawa	Jawa
Pendidikan	SMA	SMK
Pekerjaan	IRT	K.Swasta
Alamat	Nganggring, girikerto	

**A. SUBJEKTIF**

Keluhan Utama/Alasan masuk

ibu ingin memeriksakan kehamilannya, ibu mengeluh merasa lemas dan mudah lelah, agak pusing.

Riwayat Perkawinan

ini merupakan pernikahan pertama bagi ibu dan suami. lama pernikahan 1 tahun Ibu dan suami tidak pernah melakukan hubungan selain dengan pasangannya.

1. Riwayat Menstruasi

Menarche pada usia 13 tahun. Lama menstruasi 5-6 hari. Siklus 28 hari, banyak darah yang dikeluarkan sedang (3 kali ganti pembalut dalam sehari), darah keluar tidak disertai gumpalan. Tidak dismenore, Saat ini ibu mengatakan tidak sedang keputihan maupun merasakan gatal di daerah kemaluannya.

2. Riwayat Kehamilan ini

HPHT : 10 Mei 2022

HPL : 17 Feb 2023

ANC sejak UK : 8+6 minggu

Tempat ANC : Puskesmas Turi

Frekuensi ANC : TM I 3 kali TM II 2 kali TM III 3 kali

UK saat merasakan gerakan janin : 18 minggu

Gerakan janin dalam 12 jam terakhir : sering, ± 10-11 kali dalam 12 jam terakhir

3. Riwayat kehamilan, persalinan, nifas, dan bayi yang lalu

No	Tgl Lahir/Umur	JK	Usia Kehamilan	Spontan/ dgn tindakan	BB (gr)	Ditolong oleh	Perdarahan	Puerperium	Hidup/ Mati	ASI Eksklusif
1	2022 Hamil ini									

4. Riwayat Kontrasepsi yang digunakan

Ibu belum pernah menggunakan kontrasepsi apapun

5. Riwayat Imunisasi

Ibu telah mendapatkan imunisasi TT3 saat caten.

6. Riwayat Kesehatan

a. Riwayat Kesehatan Sekarang:

Ibu mengatakan sering merasa lelah dan lemas.

b. Riwayat Kesehatan yang lalu:

Ibu mengatakan tidak pernah memiliki atau mengalami sakit karena penyakit khusus

c. Riwayat Kesehatan Keluarga:

Ibu mengatakan keluarga tidak pernah menderita penyakit menurun dan menahun seperti dada Jantung, DM, Asma, Hipertensi, Hepatitis, Epilepsi. IMS, riwayat kehamilan kembar ataupun lahir sebelum waktunya.

7. Pola Pemenuhan Kebutuhan Sehari-hari

a. Pola Makan

Ibu mengatakan frekuensi makan 3 kali sehari. Porsi 1/2-1 piring Jenis makanan nasi, lauk pauk. mengatakan tidak ada keluhan saat makan/minum. Ibu tidak pernah melakukan diet. ibu mengatakan rutin meminum vitamin yang diberikan oleh bidan (tambah darah dan kalsium).

b. Pola Minum

Ibu mengatakan frekuensi minum 10-14 gelas/hari. Jenis minuman air yang di masak. Tidak meminum teh atau kopi. Tidak pernah mengonsumsi jamu.

c. Istirahat

Ibu mengatakan lama tidur 4 - 7 jam pada malam hari, tidak ada keluhan.

d. Pola Hubungan Seksual

Ibu mengatakan frekuensi hubungannya teratur 1-2 minggu sekali.

e. Personal hygiene

Ibu mengatakan mandi 2 kali sehari, membersihkan daerah genetalia setiap setelah BAB dan BAK dengan menggunakan air bersih, rutin mengganti pakaian dalam setelah mandi, atau bila merasa tidak nyaman.

f. Eliminasi

Ibu mengatakan frekuensi BAK 6-8x/hari, warna bening, bau khas urin, tidak ada keluhan. Frekuensi BAB 1x sehari, warna kecoklatan, bau khas, tidak ada keluhan.

g. Aktifitas

Aktifitas ibu sehari-hari melakukan kegiatan pekerjaan rumah tangga.

Istirahat, 1-2 kali sehari

8. Kebiasaan yang mengganggu kesehatan

Ibu mengatakan tidak mengkonsumsi jamu, alkohol atau obat-obatan.

Ibu dan suami tidak merokok.

9. Riwayat psikososialibu hamil

Ibu dan keluarga menginginkan kehamilan ini karena direncanakan, ibu mengetahui cara menjaga kehamilan salah satunya dengan datang memeriksakan kehamilannya dan ibu berencana untuk melahirkan di fasilitas kesehatan ditolong tenaga kesehatan.

**B. OBJEKTIF**

1. Pemeriksaan Umum

- a. Keadaan umum : Baik
- b. Kesadaran : Composmentis
- c. Status emosional : Stabil

2. Tanda vital

Tekanan darah	: 115/69 mmHg	Pernafasan	: 20 x / menit
Nadi	: 90x / menit	Suhu	: 36,6°C
BB saat ini	: 75,4 kg	BB sebelum hamil	: 50 kg
TB	: 152 cm	IMT	: 21,74 kg/m <sup>2</sup>
LILA	: 28 cm		

3. Pemeriksaan Fisik

- a. Kepala :. Bersih, tidak rontok, tidak ada kelainan
- b. Wajah : Simetris, tampak pucat
- c. Mata : Simetris, sklera putih, konjungtiva merah muda, tidak ada tanda-tanda infeksi.
- d. Hidung : Bersih, tidak ada polip, septum tengah
- e. Telinga : Simetris, bersih, tidak ada kelainan
- f. Mulut : Bibir nampak merah muda, tidak ada stomatitis, terdapat karies, lidah merah muda.

- g. Leher : Tidak ada pembengkakan kelenjar tyroid, kelenjar limfe, kelenjar getah bening dan vena jugularis
- h. Dada : Simetris, tidak ada benjolan, puting susu menonjol, areola hiperpigmentasi, pengeluaran asi +/-
- i. Abdomen : terlihat adanya pembesaran perut sesuai usia kehamilan, tidak terdapat bekas operasi, tidak ada massa/tumor,
- Leopold I : Teraba bagian lunak, bulat. (bokong)
- Leopold II : Bagian perut kanan ibu teraba ada tahanan memanjang, seperti papan, sebelah kiri teraba bagian kecil tidak beraturan
- Leopold III : Teraba tahanan bulat keras melenting, dapat digoyangkan.
- Leopold IV : Konvergen.
- TFU Mc Donald : 25 cm
- Auskultasi Djj : 144x/m, punctum maksimum di sebelah kanan bawah perut ibu. Gerakan janin (+)
- j. Ekstremitas : Simetris, tidak ada odema, tidak ada varises,
- k. Pemeriksaan Penunjang
- Laboratorium tanggal 9 Desember 2022.
- Hb : 9 gr%
- Golongan darah : A
- Protein urin : Negatif
- Rapid test : Non Reaktif

### C. ANALISA

Ibu Hamil Ny. T1 Usia 39 Tahun G1p0a0ah0 Uk 31 Minggu Janin tunggal hidup DJJ 144x/mnt Dengan Kehamilan Risti Usia 31 minggu Anemia

#### **D. PENATALAKSANAAN**

Tanggal 12 Desember 2022.

1. Menjelaskan kepada ibu tentang hasil pemeriksaan dalam keadaan ibu dan bayi bahwa saat ini janin baik namun ibu masih menunjukkan tanda Anemia
2. Menjelaskan bahwa saat ini kepala janin belum masuk panggul, namun masih dapat diupayakan agar cepat turun, yaitu dengan cara rutin berjalan kaki santai, senam hamil, latihan yoga agar penurunan kepala turun.
3. KIE terkait nutrisi kaya Zat besi, dan kaya akan protein serta mengatur pola istirahat.
4. Memberikan KIE persiapan persalinan, mempersiapkan tabungan atau dana cadangan untuk biaya persalinan dan biaya lainnya. Menyiapkan kartu Janin Kesehatan Nasional (JKN), jika ibu belum memiliki JKN dapat mendaftarkan ke kantor BPJS kesehatan setempat atau menanyakan ke Puskesmas. Merencanakan tempat bersalin (PMB/Puskesmas/RS). Mempersiapkan KTP, KK, dan keperluan lain untuk ibu dan bayi yang akan dilahirkan. Menyiapkan lebih dari 1 orang yang memiliki golongan darah yang sama dengan ibu dan bersedia menjadi pendonor bila diperlukan. Mempersiapkan kendaraan jika sewaktu-waktu diperlukan. dan memastikan ibu hamil dan keluarga untuk menyepakati amanat persalinan dalam stiker P4K dan sudah ditempelkan di depan rumah ibu hamil. Ibu dan suami paham dan bersedia mengikuti anjuran bidan tentang persiapan persalinan.
5. Memberitahu kembali tentang tanda-tanda awal persalinan yaitu perut mulas-mulas yang teratur, timbulnya semakin sering dan semakin lama, keluar lendir bercampur darah dari jalan lahir atau keluar cairan ketuban dari jalan lahir. Jika muncul salah satu tanda tersebut segera bawa ibu hamil ke fasilitas kesehatan dengan mematuhi protokol pencegahan Covid19. Ibu memahami dan akan segera ke faskes apabila terdapat keluhan tersebut

6. Mengingatkan kembali tentang tanda bahaya kehamilan seperti perdarahan pervaginam, sakit kepala yang hebat, penglihatan kabur, bengkak pada wajah dan jari-jari tangan, keluar cairan pervaginam, gerak janin tidak terasa, nyeri perut hebat. ibu mengerti
7. Memberikan ibu tablet Fe sebanyak 10 tablet diminum 2 x 1 tablet dan cara meminumnya yaitu pada sore/malam hari setelah makan hanya dengan menggunakan air putih atau air jeruk, tablet Vit.c sebanyak 10 tablet diminum 1x1 tablet dan boleh berbarengan dengan tablet Fe guna meningkatkan efektifitas penyerapan tablet Fe. Kalsium 10 tablet diminum 1x1 tablet diminum pada pagi hari setelah makan hanya dengan air putih. Ibu mengerti dan akan melakukan anjuran cara meminum obat yang diberikan
8. Memberitahu ibu untuk melakukan kunjungan ulang 1 minggu lagi atau bila ada keluhan langsung datang ke pelayanan kesehatan. Ibu mengerti dan bersedia melakukan kunjungan ulang.
9. Melakukan dokumentasi pada buku KIA dan buku register. Dokumentasi telah dilakukan.

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**Identitas**

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Nama	Ny. Tl	Tn. W
Umur	39 tahun	43 tahun
Agama	Kristen	Kristen
Suku/Bangsa	Jawa	Jawa
Pendidikan	SMA	SMK
Pekerjaan	IRT	K.Swasta
Alamat	Nganggring, girikerto	

**E. SUBJEKTIF**

10. Keluhan Utama/Alasan masuk

ibu ingin memeriksakan kehamilannya, agak lemas dan pusing

11. Riwayat Perkawinan

ini merupakan pernikahan pertama bagi ibu dan suami. lama pernikahan 1 tahun Ibu dan suami tidak pernah melakukan hubungan selain dengan pasangannya.

12. Riwayat Menstruasi

Menarche pada usia 13 tahun. Lama menstruasi 5-6 hari. Siklus 28 hari, banyak darah yang dikeluarkan sedang (3 kali ganti pembalut dalam sehari), darah keluar tidak disertai gumpalan. Tidak dismenore, Saat ini ibu mengatakan tidak sedang keputihan maupun merasakan gatal di daerah kemaluannya.

13. Riwayat Kehamilan ini

HPHT : 10 Mei 2022

HPL : 17 Feb 2023

ANC sejak UK : 8+6 minggu

Tempat ANC : Puskesmas Turi

Frekuensi ANC : TM I 3 kali TM II 2 kali TM III 3 kali

UK saat merasakan gerakan janin : 18 minggu

Gerakan janin dalam 12 jam terakhir : sering, ± 10-11 kali dalam 12 jam terakhir

14. Riwayat kehamilan, persalinan, nifas, dan bayi yang lalu

No	Tgl Lahir/Umur	JK	Usia Kehamilan	Spontan/ dgn tindakan	BB (gr)	Ditolong oleh	Perdarahan	Puerperium	Hidup/ Mati	ASI Eksklusif
1	2022 Hamil ini									

15. Riwayat Kontrasepsi yang digunakan

Ibu belum pernah menggunakan kontrasepsi apapun

16. Riwayat Imunisasi

Ibu telah mendapatkan imunisasi TT3 saat caten.

17. Riwayat Kesehatan

d. Riwayat Kesehatan Sekarang:

Ibu mengatakan sering merasa lelah dan lemas.

e. Riwayat Kesehatan yang lalu:

Ibu mengatakan tidak pernah memiliki atau mengalami sakit karena penyakit khusus.

f. Riwayat Kesehatan Keluarga:

Ibu mengatakan keluarga tidak pernah menderita penyakit menurun dan menahun seperti dada Jantung, DM, Asma, Hipertensi, Hepatitis, Epilepsi. IMS, riwayat kehamilan kembar ataupun lahir sebelum waktunya.

18. Pola Pemenuhan Kebutuhan Sehari-hari

a. Pola Makan

Ibu mengatakan frekuensi makan 3 kali sehari. Porsi 1/2-1 piring  
Jenis makanan nasi, lauk pauk. mengatakan tidak ada keluhan saat makan/minum. Ibu tidak pernah melakukan diet. ibu mengatakan rutin meminum vitamin yang diberikan oleh bidan (tambah darah dan kalsium).

b. Pola Minum

Ibu mengatakan frekuensi minum 10-14 gelas/hari. Jenis minuman air yang di masak. Tidak meminum teh atau kopi. Tidak pernah mengonsumsi jamu.

c. Istirahat

Ibu mengatakan Istirahat, 1-2 kali sehari. lama tidur 4 - 7 jam pada malam hari, tidak ada keluhan.

d. Pola Hubungan Seksual

Ibu mengatakan frekuensi hubungannya teratur 1-2 minggu sekali, tidak merasa sakit ataupun mengeluarkan flek atau bercak darah setelah melakukan hubungan seksual.

e. Personal hygiene

Ibu mengatakan mandi 2 kali sehari, membersihkan daerah genitalia setiap setelah BAB dan BAK dengan menggunakan air bersih, rutin mengganti pakaian dalam setelah mandi, atau bila merasa tidak nyaman.

f. Eliminasi

Ibu mengatakan frekuensi BAK 6-8x/hari, warna bening, bau khas urin, tidak ada keluhan. Frekuensi BAB 1x sehari, warna kecoklatan, bau khas, tidak ada keluhan.

g. Aktifitas

Aktifitas ibu sehari-hari melakukan kegiatan pekerjaan rumah tangga.

19. Kebiasaan yang mengganggu kesehatan

Ibu mengatakan tidak mengkonsumsi jamu, alkohol atau obat-obatan. Ibu dan suami tidak merokok.

20. Riwayat psikososial

Ibu dan keluarga menginginkan kehamilan ini karena direncanakan, ibu mengetahui cara menjaga kehamilan salah satunya dengan datang memeriksakan kehamilannya dan ibu berencana untuk melahirkan di fasilitas kesehatan ditolong tenaga kesehatan.

**F. OBJEKTIF**

4. Pemeriksaan Umum

- d. Keadaan umum : Baik
- e. Kesadaran : Composmentis
- f. Status emosional : Stabil

5. Tanda vital

Tekanan darah	: 115/69 mmHg	Pernafasan	: 20 x / menit
Nadi	: 90x / menit	Suhu	: 36,6°C
BB saat ini	: 75,4 kg	BB sebelum hamil	: 50 kg
TB	: 152 cm	IMT	: 21,74 kg/m <sup>2</sup>
LILA	: 28 cm		

6. Pemeriksaan Fisik

- l. Kepala :. Bersih, tidak rontok, tidak ada kelainan
- m. Wajah : Simetris, pucat.
- n. Mata : Simetris, sklera putih, konjungtiva pucat, tidak ada tanda-tanda infeksi.
- o. Hidung : Bersih, tidak ada polip, septum tengah
- p. Telinga : Simetris, bersih, tidak ada kelainan
- q. Mulut : Bibir nampak merah muda, tidak ada stomatitis, terdapat karies, lidah merah muda.

- r. Leher : Tidak ada pembengkakan kelenjar tyroid, kelenjar limfe, kelenjar getah bening dan vena jugularis
- s. Dada : Simetris, tidak ada benjolan, puting susu menonjol, areola hiperpigmentasi, pengeluaran asi +/-
- t. Abdomen : bulat membesar sesuai usia kehamilan, tidak terdapat bekas oprasi, tidak ada massa/tumor,
  - Leopold I : Teraba bagian lunak, bulat. (bokong)
  - Leopold II : Bagian perut kanan ibu teraba ada tahanan memanjang, seperti papan, sebelah kiri teraba bagian kecil tidak beraturan
  - Leopold III : Teraba tahanan bulat keras melenting, dapat digoyangkan, kepala belum masuk panggul.
  - Leopold IV : Konvergen.
- TFU Mc Donald : 27 cm
- Auskultasi Djj : 148x/m, punctum maksimum di sebelah kanan bawah perut ibu. Gerakan janin (+)
- u. Ekstremitas : Simetris, tidak ada odema, tidak ada varises, reflek patela +/-
- v. Pemeriksaan Penunjang
  - Laboratorium tanggal 31 Desember 2022.
  - Hb : 9 gr%
  - Golongan darah : A
  - Protein urin : Negatif
  - Rapid test : Non Reaktif

## G. ANALISA

Ibu Hamil Ny. T1 Usia 39 Tahun G1p0a0ah0 Uk 34 Minggu janin tunggal hidup DJJ 148x/mnt Preskep Puki Dengan Kehamilan Risti Usia Dan Anemia

## **H. PENATALAKSANAAN**

Tanggal 31 Desember 2022

10. Menjelaskan kepada ibu tentang hasil pemeriksaan dalam keadaan ibu dan bayi bahwa saat ini janin baik namun ibu masih menunjukkan tanda Anemia sedikit
11. Menjelaskan bahwa saat ini kepala janin belum masuk panggul, namun masih dapat diupayakan agar cepat turun, yaitu dengan cara rutin berjalan kaki santai, senam hamil, latihan yoga agar penurunan kepala turun.
12. KIE terkait nutrisi kaya Zat besi, tinggi protein, vitamin mineral dan mengatur pola istirahat.
13. Memberikan KIE persiapan persalinan, mempersiapkan tabungan atau dana cadangan untuk biaya persalinan dan biaya lainnya. Menyiapkan kartu Janin Kesehatan Nasional (JKN). Merencanakan tempat bersalin (PMB/Puskesmas/RS). Mempersiapkan KTP, KK, dan keperluan lain untuk ibu dan bayi yang akan dilahirkan. Menyiapkan lebih dari 1 orang yang memiliki golongan darah yang sama dengan ibu dan bersedia menjadi pendonor bila diperlukan. Mempersiapkan kendaraan jika sewaktu-waktu diperlukan. dan memastikan ibu hamil dan keluarga untuk menyetujui amanat persalinan dalam stiker P4K dan sudah ditempelkan di depan rumah ibu hamil. Ibu dan suami paham dan bersedia mengikuti anjuran bidan tentang persiapan persalinan.
14. Memberitahu kembali tentang tanda-tanda awal persalinan yaitu perut mulas-mulas yang teratur, timbulnya semakin sering dan semakin lama, keluar lendir bercampur darah dari jalan lahir atau keluar cairan ketuban dari jalan lahir. Jika muncul salah satu tanda tersebut segera bawa ibu hamil ke fasilitas kesehatan dengan mematuhi protokol pencegahan Covid19. Ibu memahami dan akan segera ke faskes apabila terdapat keluhan tersebut
15. Mengingatkan kembali tentang tanda bahaya kehamilan seperti perdarahan pervaginam, sakit kepala yang hebat, penglihatan kabur,

bengkak pada wajah dan jari-jari tangan, keluar cairan pervaginam, gerak janin tidak terasa, nyeri perut hebat. ibu mengerti

16. Memberikan ibu tablet Fe sebanyak 10 tablet diminum 2x1 tablet dan cara meminumnya yaitu pada sore/malam hari setelah makan hanya dengan menggunakan air putih atau air jeruk, tablet Vit.c sebanyak 10 tablet diminum 1x1 tablet dan boleh berbarengan dengan tablet Fe guna meningkatkan efektifitas penyerapan tablet Fe. Kalsium 10 tablet diminum 1x1 tablet diminum pada pagi hari setelah makan hanya dengan air putih. Ibu mengerti dan akan melakukan anjuran cara meminum obat yang diberikan
17. Memberitahu ibu untuk melakukan kunjungan ulang 1 minggu lagi atau bila ada keluhan langsung datang ke pelayanan kesehatan. Ibu mengerti dan bersedia melakukan kunjungan ulang.
18. Melakukan dokumentasi pada buku KIA dan buku register. Dokumentasi telah dilakukan.

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**ASUHAN KEBIDANAN IBU BERSALIN  
PADA NY. TI UMUR 39 TAHUN G<sub>1</sub>P<sub>0</sub>A<sub>b0</sub>A<sub>h0</sub> UMUR KEHAMILAN 41  
MINGGU DENGAN PERSALINAN SEKSIO CAESARIA**

TANGGAL/JAM : 24 Februari 2023 / 16.40 WIB

<b>S</b>	<p>Ny.T mengatakan memeriksakan kehamilannya di dr spog atas rujukan puskesmas, lalu disarankan untuk operasi SC dengan indikasi oligohidramnion dan post date berdasarkan pemeriksaan USG oleh obsgyn di RS</p>										
	Nama	IBU	AYAH								
	Umur	Ny. TI	Tn. W								
	Agama	39 tahun	43 tahun								
	Suku/Ban	Kristen	Kristen								
	Pendidikan	Jawa	Jawa								
	Pekerjaan	SMA	SMK								
	Alamat	IRT	K.Swasta								
		Nganggring, girikerto									
	a. Riwayat kehamilan, persalinan dan nifas yang lalu										
	No	Tgl Lahir/Umur	JK	Usia Kehamilan	Spontan / dgn tindakan	BB (gr)	Ditolong oleh	Perdarahan	Puerperium	Hidup/Mati	ASI Eksklusif
	1	2022 Hamil ini									
	b. Riwayat kehamilan sekarang :										
		HPHT	: 10 Mei 2022								
		HPL	: 17 Feb 2023								

	<p>c. Riwayat kesehatan :</p> <p>Ibu mengatakan bahwa ibu dan keluarga tidak pernah/tidak sedang menderita penyakit menular (TBC, Hepatitis, PMS), menurun (DM,Asma,Hipertensi), dan menahun (jantung, paru, ginjal)</p> <p>d. Riwayat keturunan kembar :</p> <p>ibu mengatakan baik dari keluarga ibu ataupun suami tidak memiliki riwayat keturunan kembar</p> <p>e. Riwayat alergi: Ibu mengatakan tidak memiliki alergi makanan maupun obat-obatan</p> <p>f. Riwayat KB dan rencana penggunaan alat kontrasepsi setelah persalinan :</p> <p>Pasangan tidak menggunakan kontrasepsi apapun sebelum kehamilan ini dan ibu berencana ingin dipasang IUD.</p>																
<p><b>O</b></p>	<p>1. Keadaan umum : baik</p> <table data-bbox="427 1021 1458 1171"> <tr> <td>Tekanan darah</td> <td>: 120/70 mmHg</td> <td>Respirasi</td> <td>: 20 x / menit</td> </tr> <tr> <td>Nadi</td> <td>: 86 x / menit</td> <td>BB</td> <td>: 75,4 kg</td> </tr> <tr> <td>Suhu</td> <td>: 36,3°C</td> <td>Lila</td> <td>: 28 cm</td> </tr> </table> <p>2. Pemeriksaan fisik</p> <p>Wajah : Tidak edema, wajah nampak pucat</p> <p>Mata : Konjungtiva pucat</p> <p>Leher : Tidak ada pembesaran kelenjar tiroid, vena jugularis rata</p> <p>Payudara : Simetris, tidak ada benjolan abnormal, puting susu menonjol kiri dan kanan, pengeluaran colostrum (+/+)</p> <p>Abdomen : Perut membesar sesuai usia kehamilan, tidak ada bekas luka operasi, kandung kemih kosong, terdapat.</p> <p>Palpasi</p> <table data-bbox="427 1653 1501 1962"> <tr> <td>Leopold I</td> <td>: Teraba bagian lunak, bulat, tidak melenting (Bokong)</td> </tr> <tr> <td>Leopold II</td> <td>: Pada bagian kiri perut ibu, teraba bagian kecil-kecil, tanpa tahanan (Ekstremitas), Pada bagian kanan perut ibu, teraba keras mendatar ada tahanan (Punggung)</td> </tr> </table>	Tekanan darah	: 120/70 mmHg	Respirasi	: 20 x / menit	Nadi	: 86 x / menit	BB	: 75,4 kg	Suhu	: 36,3°C	Lila	: 28 cm	Leopold I	: Teraba bagian lunak, bulat, tidak melenting (Bokong)	Leopold II	: Pada bagian kiri perut ibu, teraba bagian kecil-kecil, tanpa tahanan (Ekstremitas), Pada bagian kanan perut ibu, teraba keras mendatar ada tahanan (Punggung)
Tekanan darah	: 120/70 mmHg	Respirasi	: 20 x / menit														
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	<p>Leopold III : Pada bagian bawah perut ibu, Teraba keras bulat,tidak dapat digoyangkan</p> <p>Leopold IV : Kedua tangan pemeriksa sudah tidak bertemu lagi (Divergent) berarti janin sudah masuk panggul.</p> <p>MC. Donald : 29 cm      TBJ : <math>(29-11) \times 155 = 2.790</math> gram</p> <p>DJJ : 144x / menit</p> <p>Genitalia : Tidak ada varises, tidak ada edema, belum ada pengeluaran lendir darah</p> <p>Ekstremitas : Tidak ada edema</p> <p>Px.Penunjang : Rapid test antigen negative. HB 8.4 gr/dl</p> <p>USG hasil menunjukkan bahwa saat ini ibu mengalami oligohidramnion dan membutuhkan tindakan operatif SC</p>
<b>A</b>	Ny. TI Umur 39 Tahun G <sub>1</sub> P <sub>0</sub> Ab <sub>0</sub> Ah <sub>0</sub> Umur Kehamilan 41 Minggu, janin tunggal, hidup dengan oligohidramnion dan Postdate
<b>P</b>	<p>1. Menyampaikan keadaan ibu bahwa saat ini perkembangan bayi masih baik dan sesuai usia kehamilan, namun air ketuban mulai menipis sehingga perlu dilakukan tindakan SC oleh dr Spog.</p> <p>Ibu setuju.</p>

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**ASUHAN KEBIDANAN PADA BAYI BARU LAHIR  
Bayi Ny. Tl usia 0 jam BBL Normal**

TANGGAL/JAM : 24 Februari 2022/16.50 WIB

**A. DATA SUBYEKTIF**

**1. Riwayat Antenatal**

G1P0A0 Umur Kehamilan 41 minggu

Riwayat ANC : teratur, 8 kali

Imunisasi TT : TT4

TT terakhir : Catin

Keluhan saat hamil : Mual, muntah, Nyeri punggung, pusing, lemas

Penyakit selama hamil : Anemia Sedang

Kebiasaan makan : Ibu dan keluarganya mengatakan makan 3x sehari, jenis: nasi, sayur lauk dan buah

Obat/ Jamu : Ibu dan keluarganya mengatakan tidak pernah minum jamu/obat

Merokok : tidak ada yang merokok

Komplikasi ibu : tidak ada

Komplikasi Janin : tidak ada

**2. Riwayat Intranatal**

Lahir tanggal 24 Februari 2022 /16.50 WIB

Jenis persalinan : SC

Penolong : Dokter

Komplikasi

a. Ibu : tidak ada

b. Janin : tidak ada

**3. Keadaan bayi baru lahir**

a. Penilaian awal bayi 41 minggu

b. Ketuban Jernih

- c. Bayi menangis kuat
- d. Tonus otot aktif
- e. Warna kulit kemerahan

Nilai Apgar : 8/9/10

## **B. ANALISA**

Bayi Ny. Tl usia 0 Jam BBLC lahir SC Neonatal Normal

## **C. PENATALAKSANAAN**

1. Meletakkan bayi dengan menggunakan handuk kering di atas perut ibu
2. Menilai bayi bahwa bayi menangis kuat, tonus otot baik, air ketuban jernih warna kulit bayi kemerahan pada seluruh tubuh
3. Membersihkan jalan nafas dari mulut hingga hidung dengan menggunakan suction untuk menghisap lendirnya. Bayi sudah dibersihkan jalan nafas dan jalan nafas bersih.
4. Mengeringkan bayi kembali
5. Memotong tali pusat dengan menggunakan gunting tali pusat. Tali pusat telah diklem dan telah terpotong.
6. Melakukan IMD di dada ibu tanpa dibubuhi pakaian apapun sehingga kulit bayi dan ibu saling bersentuhan. IMD telah dilakukan proses IMD  $\pm 60$  menit
7. Memberikan vitamin K1 1 mg secara IM di vastus lateralis paha kiri sebanyak 0,5 cc. Bayi menangis kuat saat diberikan vitamin K1
8. Memberikan imunisasi HB0 0,5 ml intramuskuler di paha kanan anterolateral. Bayi menangis kuat setelah diberikan imunisasi HB0
9. Memberikan salep mata Oxytethra 1% sebanyak 1 olesan dari ujung dalam sampai ujung luar di kedua mata bayi. Salep mata telah dioleskan
10. Melakukan pemeriksaan fisik dan antropometri. Evaluasi: BB = 2865gram, PB= 47cm, LK = 35 cm, LD = 30 cm, Lila 11 cm. belum BAB, BAK belum.
11. Mengambil sidik kaki kanan dan kiri bayi untuk dokumentasi dan memberikan gelang berwarna merah muda di kaki bayi yang diberikan identitas bayi serta memberikan pakaian bayi hingga bayi hangat.
12. Memfasilitasi kontak dini bayi dengan ibu untuk dilakukan rawat gabung.

- a. Mendorong ibu untuk menyusui bayinya meskipun ASI yang keluar masih sedikit
- b. Mengajarkan ibu Teknik menyusui
- c. Memberitahu ibu untuk menyusui bayinya sesering mungkin paling tidak setiap 2 jam dan menyendawakan bayinya setelah menyusui.

**Kunjungan Neonatal ke-1**

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**ASUHAN KEBIDANAN PADA BAYI NY. TI USIA 3 HARI**

TANGGAL/JAM : 26 Februari 2023

S	<p>Ibu mengatakan bayinya sudah pandai menyusu, tidak ada keluhan terkait bayi nya</p> <p>Nama Bayi : Bayi Ny. TI</p> <p>Usia : 3 hari</p> <p>JK : Perempuan</p>
O	<p>Pemeriksaan Umum</p> <p>a. Keadaan umum : sedang</p> <p>b. Kesadaran : Composmentis</p> <p>c. Suhu aksila : 36,7 °C</p> <p>d. Pernafasan : 45 x/menit</p> <p>e. Denyut jantung : 145x/menit</p> <p>Pemeriksaan fisik</p> <p>a Tonus/Aktivitas : Aktif, menangis keras</p> <p>b Kepala/leher</p> <p>Fonranel anterior : Lunak</p> <p>Gambaran wajah : Simetris</p> <p>Bentuk Kepala : Normal</p> <p>Leher : Tidak ada pembengkakan kelenjar tyroid, tidak ada struma, tidak ada torticolis</p>

c	Mata	: Sklera tidak ikterik, conjungtiva tidak anemia, palpebra tidak edema, bentuk normal, tidak ada tanda-tanda infeksi		
d	Hidung	: Simetris, tidak ada nafas cuping hidung		
e	Mulut	: tidak ada luka, bibir kemerahan.		
f	Toraks	: Simetris, tidak ada retraksi dinding dada, suara nafas paru-paru kiri dan kanan sama, suara nafas vesikuler, respirasi spontan.		
g	Punggung	: Bentuk normal. tidak ada spina bifida, tidak ada Meningocele		
h	Abdomen	: Bentuk normal, tali pusat bersih, tidak ada perdarahan dan tanda-tanda infeksi. Cubitan kulit perut normal		
i	Genitalia	: lubang vagina normal, terdapat uretra, labia mayora menutupi labia minora, tidak ada lesi atau tanda infeksi.		
j	Anus	: Terdapat lubang anus, tidak ada kelainan		
k	Ekstremitas atas dan bawah	: Simetris, jumlah jari lengkap, tidak ada polidaktili, tidak ada Sindaktili. tidak ada Fraktur		
l	Kulit	: Warna kemerahan		
a.	Reflek			
	Moro	: Positive	Graphs	: Positive
	Rooting	: Positive	Sucking	: Positive
	Tonic neck	: Positive		

	<p>f. Antropometri</p> <p>BB : 3000 gram      LD : 31 cm</p> <p>PB/LK : 48 cm/35cm      LILA : 11cm</p> <p>g. Eliminasi :</p> <p>BAB : tidak ada kelainan, bau khas, berwarna kuning</p> <p>BAK : tidak ada kelainan, bau khas, berwarna kuning</p>
A	Bayi Ny. TL Usia 3 hari sehat, keadaan umum baik.
P	<ol style="list-style-type: none"> <li>1. Menjelaskan kepada ibu tentang hasil pemeriksaan bahwa bayinya dalam keadaan sehat. Ibu mengerti</li> <li>2. Menjaga kehangatan bayi dengan cara membedong bayi dengan kain yang bersih dan kering, mengganti pakaian bayi jika basah.</li> <li>3. Memberikan KIE kepada ibu dan keluarga tanda bahaya bayi baru lahir seperti kejang frekuensi nafas kurang dari 20 x per menit atau lebih dari 60 x/menit, tarikan dada bawah kedalam yang kuat, bayi merintih. Ibu mengerti penjelasan yang disampaikan</li> <li>4. Menjelaskan pada ibu dan keluarga cara perawatan bayi sehari-hari yaitu : mempertahankan lingkungan tetap hangat, mencegah iritasi pada kulit bayi, membersihkan sekitar mulut dan leher bayi setiap selesai menyusui Ibu mengerti mengerti dengan penjelasan</li> <li>5. Menganjurkan ibu untuk menyusui bayinya dan memberika ASI Eksklusif pada bayi selama 6 bulan tanpa memberikan tambahan makanan apapun. Ibu bersedia memberikan ASI Eksklusif pada bayinya.</li> <li>6. Melakukan pendokumentasian. Pendokumentasian sdah dilakukan..</li> </ol>

**Kunjungan Nifas ke 1**

**PRODI PENDIDIKAN PROFESI BIDAN  
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**ASUHAN KEBIDANAN PADA IBU NIFAS NORMAL PADA NY. TI USIA  
39 tahun P1A0AH1 POST PARATUM 3 HARI**

TANGGAL/JAM : 26 Februari 2023/09.00 WIB

<b>S</b>	<p>Ibu mengatakan senang atas kelahirannya, masih merasa lemas dan mulas, nyeri pada luka jahitan operasi, masih belum bisa bergerak banyak.</p> <p>a. Riwayat Psikososial</p> <p>Ibu mengatakan merasa senang atas kelahiran anaknya.</p> <p>Ibu mengatakan suami dan keluarga sangat senang dengan kelahiran bayi keduanya ditandai dengan selalu menemani dan membantu selama kehamilan hingga masa nifasnya.</p> <p>Kebutuhan Makan &amp; Minum : Ibu sudah makan makan dan minum, jenis :Nasi, lauk, sayur, buah, dan snack</p> <p>Istirahat Post Partum : Ibu mengatakan tidur 3-4 jam setelah persalinan</p> <p>Aktivitas : Ibu sudah bisa duduk tapi masih takut bergerak lebih aktif</p> <p>Eliminasi post partum : Ibu sudah BAB dan BAK</p>
<b>O</b>	<p>Tekanan darah : 120/80 mmHg</p> <p>Nadi : 76 x/menit</p> <p>Suhu : 36,6°C</p> <p>Keadaan fisik ibu : ibu mengatakan Payudara ibu simetris, tidak ada benjolan abnormal, putting susu menonjol, areola kehitaman, pengeluaran Asi +/+</p>

	<p>Abdomen : Luka post operasi baik, masih basah, TFU pertengahan simpisis pusat, uterus keras.</p> <p>Genetalia :pengeluaran darah berwarna merah (lochea rubra) tidak berbau busuk, tidak ada tanda- tanda infeksi ,</p> <p>PPV ± 15 cc.</p> <p>Ekstremitas atas dan bawah : tidak ada bengkak</p>
<b>A</b>	NY. TI Usia 39 tahun P <sub>1</sub> A <sub>0</sub> AH <sub>1</sub> Post SC 3 hari
<b>P</b>	<p>1) Memberitahu ibu bahwa hasil pemeriksaan baik, TD : 120/80 mmHg, TFU ½ symp pusat, kandung kencing kosong dan pengeluaran pervaginam berupa darah, dengan jumlah yang normal</p> <p>Hasil : Ibu senang mengetahui hasil pemeriksaan baik,dan dalam kondisi normal.</p> <p>2) Memberikan KIE dan mengajarkan ibu tentang teknik menyusui, ASI eksklusif, dan memotivasi ibu untuk memberikan ASI secara on demand. Memastikan ibu menyusui bayinya dengan baik dan tidak memperlihatkan tanda- tanda penyulit dan mengajarkan ibu melakukan teknik marmet apabila asi yang keluar mulai berkurang</p> <p>hasilIbu mengerti dan dapat melakukannya Hasil: bayi menyusui dengan baik secara on demand dan ibu akan melakukan teknik marmet sesuai yang ajarkan bidan.</p> <p>3) Mengajarkan ibu untuk latihan mobilisasi dengan memiringkan badan ke kanan dan kekiri dengan rutin dan hati hati, ibu harus sudah bisa berjalan di hari ketiga agar pemulihan luka lebih optimal.</p> <p>4) mengajarkan ibu perawatan payudara seperti Payudara harus dibersihkan dengan teliti setiap hari selama mandi dan sekali lagi ketika hendak menyusui. Hal ini akan mengangkat kolostrum</p>

	<p>yang kering atau sisa susu dan membantu mencegah akumulasi dan masuknya bakteri baik ke puting maupun ke mulut bayi.</p> <p>5) Memberitahu ibu untuk istirahat yang cukup, makan-makanan gizi seimbang serta minum air putih 10 gelas perhari, Hasil : Ibu mengerti dan bersedia melakukannya</p> <p>6) Memberitahu ibu tentang bahaya masa nifas seperti pengeluaran darah pervaginam yang abnormal, payudara bengkak kemerahan dan panas, sakit kepala hebat, pandangan kabur dan infeksi pada luka jahitan post operasi dengan tanda infeksi yaitu bengkak, kemerahan, demam, luka berbau dan jahitan membuka. Apabila terdapat salah satu tanda tersebut ibu harus datang ke petugas kesehatan atau fasilitas kesehatan. Hasil : Ibu mengerti dan bersedia datang ke fasilitas kesehatan terdekat apabila ada keluhan</p> <p>7) Menganjurkan ibu untuk melakukan kunjungan ulang 1 minggu kemudian Hasil : Ibu mengerti dan akan melakukan kunjungan ulang 1 minggu kemudian Mendokumentasikan hasil pemeriksaan pada buku KIA Hasil : Hasil pemeriksaan sudah didokumentasikan.</p>
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## Kunjungan Nifas ke-2

**PRODI PENDIDIKAN PROFESI BIDAN  
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**ASUHAN KEBIDANAN PADA IBU NIFAS NORMAL PADA NY.S USIA  
19 tahun P1A0AH1 POST PARATUM 18 HARI**

Kunjungan via *Whatsapp*

TANGGAL/JAM : 1 Maret 2023

S	Ibu mengatakan saat ini tidak ada keluhan Ibu menanyakan seputar ASI
O	Tidak dilakukan karena via <i>whatsapp</i>
A	NY. TI Usia 39 tahun P <sub>1</sub> A <sub>0</sub> AH <sub>1</sub> Post SC 7 hari
P	<ol style="list-style-type: none"> <li>1. Memberi apresiasi karena ibu tetap memberi ASI Eksklusif kepada bayinya dan tetap memotivasi ibu untuk tetap memberika asi Eksklusif <i>on demand</i>.</li> <li>2. menjawab pertanyaan ibu seputar ASI terkait ASI perah. Bahwa ASI yang sudah diperah dapat tahan 6-8 jam bila tempat penyimpanan asi bersih di suhu ruangan. Jika disimpan dalam kulkas akan tahan 3-8 hari, jika didalam freezer akan tahan 3-6 bulan.</li> <li>3. Menganjurkan ibu untuk memenuhi asupan nutrisi dengan gizi yang baik karena kualitas asi yang baik berasal dari asupan nutrisi yang baik pula. istirahat yang cukup dengan cara ibu tidur/istirahat ketika bayinya sedang tidur. Ibu mengerti.</li> <li>4. Mendokumentasikan tindakan. Tindakan telah didokumentasikan..</li> </ol>

## Lampiran

Lampiran 1. Lembar *Informed Consent* COC

**LEMBAR PERSETUJUAN MENJADI RESPONDEN  
(INFORMED CONSENT)**

Yang bertanda tangan di bawah ini:

Nama : Theresia Linda .  
 Umur : 39 tahun .  
 Alamat : Nanggung , Giriserto .  
 No Telp/ WA :

Menyatakan bahwa saya **Setuju** berpartisipasi menjadi responden dalam kegiatan Asuhan kebidanan Continuity of care oleh mahasiswa Profesi Kebidanan Poltekkes Kemenkes Yogyakarta.

Setelah telah mendapatkan penjelasan secara rinci dan telah memahami kegiatan yang akan dilakukan. Apabila sewaktu-waktu selama kegiatan saya merasa dirugikan dalam bentuk apapun, saya berhak membatalkan persetujuan ini tanpa dikenakan sanksi apapun dan menyampaikannya kepada mahasiswa yang bersangkutan.

\*coret salah satu

Sleman, 12 Desember 2022

Saksi

  
 (.....)

Responden

  
 (Theresia Linda)

Mahasiswa

  
 (Wahyuning Purwati)

## Lampiran 2. Kunjungan rimah 12 Desember 2022



Lampiran 3. Kunjungan 31 Desember



Lampiran 4. Nifas hari ke 3



## Lampiran 5. Journal acuan

Received: 17 March 2019 | Revised: 3 February 2020 | Accepted: 5 February 2020

DOI: 10.1111/aogs.13828

## ORIGINAL RESEARCH ARTICLE



## Risk of adverse pregnancy outcomes of late- and postterm pregnancies in advanced maternal age: A national cohort study

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 Aafke Bruinsma<sup>2</sup> | Ben W. Mol<sup>3</sup> | Frank Vandenbussche<sup>1</sup> |  
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## Correspondence

Joep C. Kortekaas, Department of Obstetrics & Gynecology, Radboud University Medical Center, Nijmegen, the Netherlands.  
 Email: joep.kortekaas@radboudumc.nl

## Abstract

**Introduction:** There is an increase in women delivering  $\geq 35$  years of age. We analyzed the association between advanced maternal age and pregnancy outcomes in late- and postterm pregnancies.

**Material and methods:** A national cohort study was performed on obstetrical low-risk women using data from the Netherlands Perinatal Registry from 1999 to 2010. We included women  $\geq 18$  years of age with a singleton pregnancy at term. Women with a pregnancy complicated by congenital anomalies, hypertensive disorders or diabetes mellitus were excluded. Composite adverse perinatal outcome was defined as stillbirth, neonatal death, meconium aspiration syndrome, 5-minute Apgar score  $< 7$ , neonatal intensive care unit admittance and sepsis. Composite adverse maternal outcome was defined as maternal death, placental abruption and postpartum hemorrhage of  $> 1000$  mL.

**Results:** We stratified the women into three age groups: 18–34 ( $n = 1\,321\,366$  [reference]); 35–39 ( $n = 286\,717$ ) and  $\geq 40$  ( $n = 40\,909$ ). Composite adverse perinatal outcome occurred in 1.6% in women aged 18–34, 1.7% in women aged 35–39 (relative risk [RR] 1.06, 95% confidence interval [95% CI] 1.03–1.08) and 2.2% in women aged  $\geq 40$  (RR 1.38, 95% CI 1.29–1.47), with 5-minute Apgar score  $< 7$  as the factor contributing most to the outcome. Composite adverse maternal outcome occurred in 4.6% in women aged 18–34, 5.0% in women aged 35–39 (RR 1.08, 95% CI 1.06–1.10) and 5.2% in women aged  $\geq 40$  (RR 1.14, 95% CI 1.09–1.19), with postpartum hemorrhage  $> 1000$  mL as the factor contributing most to the outcome. In all age categories, the risk of adverse pregnancy outcomes was higher for nulliparous than for multiparous women. The risk of adverse outcomes increased in both nulliparous and parous women with advancing gestational age. When adjusted for parity, onset of labor and gestational age, advanced maternal age is associated with an increase in both composite adverse perinatal and maternal outcomes.

**Abbreviations:** AMA, advanced maternal age; CAMO, composite adverse maternal outcomes; CAPO, composite adverse perinatal outcome; CI, confidence interval; OR, odds ratio; RR, relative risk.

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**Conclusions:** The risk of adverse pregnancy outcome increases with advancing maternal age. Women aged  $\geq 40$  have an increased risk of adverse perinatal and maternal outcome when pregnancy goes beyond 41 weeks.

**KEYWORDS**

adverse pregnancy outcome, cesarean, delivery, induction of labor, maternal age, morbidity, mortality, postpartum hemorrhage, stillbirth

## 1 | INTRODUCTION

Advanced maternal age (AMA) is mostly defined as a pregnancy in women  $\geq 35$  or  $\geq 40$  years of age during their pregnancy or delivery.<sup>1-6</sup> In the Netherlands, there has been an increase in women  $\geq 35$  years giving birth, from 5.6% during the 1970s to 21.4% in 2010, with increasing age at first child from 24.3 years in 1970 to 29.4 years in 2010.<sup>7</sup> In 2010, of all women who delivered in the Netherlands 18.2% were aged 35-39 years, 3.2% 40-44 years and 0.1%  $>45$  years.<sup>8</sup>

AMA is associated with adverse perinatal outcomes such as fetal death and adverse maternal outcomes, eg, emergency operative deliveries.<sup>3-6,9-13</sup> In some countries it is advised in guidelines to induce women with an AMA in order to prevent adverse pregnancy outcomes.<sup>14,15</sup> Women with AMA have an increased risk of a late-term (41 weeks + 0 days to 41 weeks + 6 days) and postterm ( $\geq 42$  weeks + 0 days) pregnancy.<sup>16</sup> Postterm pregnancy at any age is associated with adverse perinatal and maternal outcome, though the absolute risk of fetal death remains low.<sup>17,18</sup> In the Netherlands and Scandinavian countries, it is being debated whether to induce labor at 41 weeks + 0 days or allow pregnancy to continue until 42 weeks + 0 days in low-risk women.<sup>19-22</sup> However, little is known of the association of maternal age with perinatal and maternal outcomes in each gestational week. To get more insight into possible associations, we analyzed the effects of both maternal age and gestational age on adverse pregnancy outcomes using data from the Dutch Perinatal Registry (Perined) to determine the effects of AMA on adverse perinatal and maternal outcomes in term-, late- and post-term pregnancies.

## 2 | MATERIAL AND METHODS

### 2.1 | Database

A national retrospective cohort study was performed according to the STROBE guidelines.<sup>23</sup> Births registered between 1999 and 2010 in Perined were used. Perined contains information on all pregnancies, deliveries, neonatal admissions and resubmissions until 28 days after birth in the Netherlands, with a coverage of 96%.<sup>24</sup> Since this study used anonymous data collected by Perined, no ethical approval was needed under Dutch law and regulations.<sup>25</sup>

### Suggestion of the team to keep the focus more on AMA:

In our cohort from 1999 to 2010, we found increasing composite adverse perinatal and maternal outcomes in pregnancies between 37 weeks + 0 days to 42 weeks + 6 days in women with advanced maternal age ( $\geq 35$  years), after adjustment for parity, gestational age and onset of labor.

### 2.2 | Inclusion and exclusion

We selected women with a singleton birth, no known fetal congenital anomalies,  $\geq 37$  weeks of gestation and a fetus in cephalic position. Women  $<18$  of age, women with both preexisting and pregnancy-induced hypertensive disorder or preexisting or gestational diabetes mellitus were excluded from analysis. Thereby, we created a cohort mimicking a group of women with a relatively high probability of reaching 41 weeks + 0 days of gestation without medical or obstetrical interventions.

In general, pregnancy dating in the Netherlands is performed by first trimester ultrasound or, if ultrasound is not performed, by known last menstruation.<sup>26</sup> Body mass index and smoking were not reliably reported and could therefore not be included in the analyses. The women were stratified into three maternal age categories: 18-34, 35-39 and  $\geq 40$  years.<sup>1</sup> We defined age category 18-34 years as the reference group and both the 35-39 and  $\geq 40$  years categories as AMA. Within these age groups, women were also stratified by gestational age by week of gestation. We defined pregnancies with a gestational age of 37 weeks + 0 days to 40 weeks + 6 days as the reference group, 41 weeks + 0 days to 41 weeks + 6 days as late-term and 42 weeks + 0 days to 42 weeks + 6 days as postterm pregnancy.

### 2.3 | Outcome measures

We studied the incidence of adverse perinatal and adverse maternal outcomes. Composite adverse perinatal outcome (CAPO) consisted of stillbirth, neonatal death (up to 28 days), meconium aspiration syndrome, Apgar score at 5 minutes  $<7$ , neonatal intensive care unit admittance for at least 24 hours and sepsis. Composite adverse

maternal outcomes (CAMO) consisted of maternal death, placental abruption and postpartum hemorrhage of >1000 mL. Though a case (woman or neonate) could suffer from more than one adverse event, it was counted as one event in the composite adverse perinatal outcome or composite adverse maternal outcome. Mode of delivery was categorized as (1) spontaneous, (2) operative vaginal delivery due to fetal distress, operative vaginal delivery due to arrest of labor or operative vaginal delivery due to a combination of fetal distress and arrest of labor and (3) cesarean section, either elective cesarean section or emergency cesarean section based on fetal distress, arrest of labor or a combination. We analyzed all modes of delivery separately in each age group.

## 2.4 | Statistical analyses

All outcomes were stratified for the three maternal age groups. Live birth was used as the denominator to assess the variables neonatal death, meconium aspiration syndrome, Apgar score at 5 minutes <7, neonatal intensive care unit admission and sepsis. In all other variables, "birth" was used as denominator to calculate proportions. Comparisons on percentages of mode of delivery were made by stating the numerator as number of "mode of delivery" and the denominator as "the total number of deliveries". We used age 18-34 as a reference group and compared proportions in age group 35-39 and  $\geq 40$  with proportions in the reference group on each variable with Chi-square testing. Relative risks (RR) and 95% confidence intervals (95% CI) are provided. Tests were performed two-sided and, because of multiple testing,  $P < .001$  was considered statistically significant.

The association between maternal age and the occurrence of CAPO and CAMO was analyzed with risk ratios, estimated with a generalized linear model with the CAPO/CAMO event as dependent variable, and with age as the covariable (categories 18-34, 35-39 and

$\geq 40$ ), adjusting for parity (categories nulliparous, multiparous), onset of labor (categories spontaneous onset of labor, induction of labor or elective cesarean) and gestational age (categories 37 weeks + 0 days to 40 weeks + 6 days, 41 weeks + 0 days to 41 weeks + 6 days and 42 weeks + 0 days to 42 weeks + 6 days), and used a binomial distribution for the dependent variable and a log link. Data analyses were conducted with SPSS Statistics 23 (IBM Corp.).

## 2.5 | Ethical approval

No ethical approval was needed under Dutch law and regulations.<sup>25</sup> This study was approved by Perined under approval number 16.16.

## 3 | RESULTS

In the Perined database, 1 810 372 women had a term singleton birth in cephalic position without known congenital anomalies from 1 January 1999 through 31 December 2010. We excluded 139 958 (7.7%) women with a hypertensive disorder, 14 809 (0.8%) women with diabetes mellitus and 6613 women <18 years of age (0.4%), leaving 1 648 992 births in the total cohort (Figure 1).

Baseline characteristics and mode of delivery are shown in Table 1. Women with AMA were more often multiparous. Mode of delivery is shown in Table 2. Women with AMA had more labor inductions and fewer spontaneous vaginal deliveries in comparison with women without AMA. The rate of cesarean section was 8.8% in women aged 18-34, 12.3% in women aged 35-39 (RR 1.35, 95% CI 1.34-1.36), and 16.3% in women aged  $\geq 40$  (RR 1.98, 95% CI 1.93-2.03), mainly due to an increase in elective cesarean section (2.5%, 5.2% and 7.1%, respectively). There was an increase in cesarean section due to fetal distress (1.3%, 1.6% and 2.5% at age 18-34;

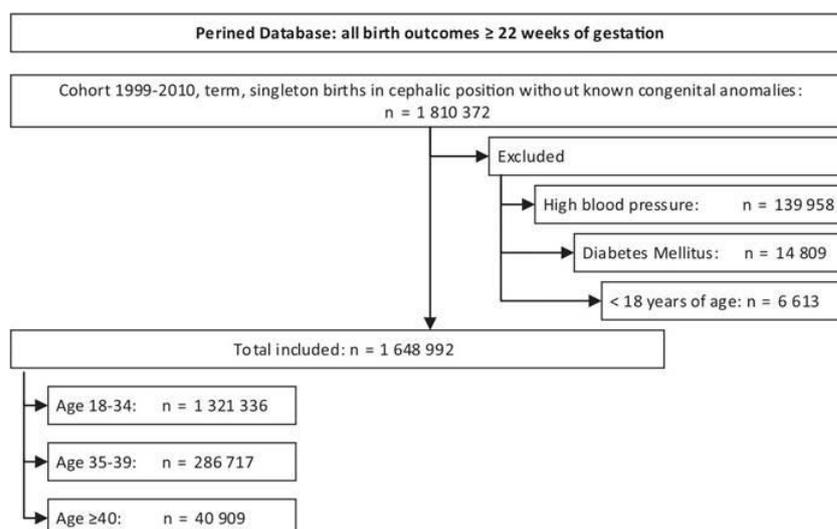


FIGURE 1 Flowchart cohort

TABLE 1 Baseline characteristics

	Cohort characteristics of the different age groups									
	Age									
	18-34 (ref)		35-39		≥40					
	n	(%)	n	(%)	RR	95% CI	n	(%)	RR	95% CI
	1 321 366	80.1	286 717	17.4			40 909	2.5%		
Maternal characteristics										
Nulliparous	632 797	47.9	69 999	24.4	0.42	0.41-0.42 <sup>a</sup>	9390	23.0	0.33	0.33-0.34 <sup>a</sup>
Low SES	346 327	26.2	57 786	20.2	0.75	0.75-0.76 <sup>a</sup>	10 305	25.2	0.95	0.93-0.97 <sup>a</sup>
White ethnicity	1 055 459	79.7	241 439	84.2	1.28	1.27-1.29 <sup>a</sup>	31 505	77.0	0.85	0.83-0.87 <sup>a</sup>
Gestational age at delivery										
37 <sup>+0</sup> -37 <sup>+6</sup> wk	68 095	5.2	14 573	5.1	0.99	0.97-1.00	2383	5.8	1.13	1.09-1.18 <sup>a</sup>
38 <sup>+0</sup> -38 <sup>+6</sup> wk	174 002	13.2	40 691	14.2	1.07	1.06-1.08 <sup>a</sup>	6435	15.7	1.22	1.19-1.26 <sup>a</sup>
39 <sup>+0</sup> -39 <sup>+6</sup> wk	327 518	24.8	71 208	24.8	1.00	0.995-1.01	10 102	24.7	1.00	0.97-1.02
40 <sup>+0</sup> -40 <sup>+6</sup> wk	412 785	31.2	87 165	30.4	0.97	0.96-0.98 <sup>a</sup>	11 654	28.5	0.88	0.86-0.90 <sup>a</sup>
41 <sup>+0</sup> -41 <sup>+6</sup> wk	269 398	20.4	58 252	20.3	1.00	0.99-1.01	8063	19.7	0.96	0.94-0.98
42 <sup>+0</sup> -42 <sup>+6</sup> wk	69 568	5.3	14 828	5.2	0.99	0.97-0.999	2272	5.6	1.06	1.01-1.10
Onset of labor										
Induction of labor	160 442	12.1	39 335	13.7	1.21	1.11-1.13 <sup>a</sup>	6819	16.7	1.43	1.39-1.47 <sup>a</sup>
Elective cesarean section	32 730	2.5	14 941	5.2	1.80	1.78-1.82 <sup>a</sup>	2902	7.1	2.84	2.74-2.95 <sup>a</sup>

<sup>a</sup>P < .001.

TABLE 2 Mode of delivery

	Maternal age									
	18-34 (ref)		35-39		≥40					
	n	%	n	%	RR	95% CI	n	%	RR	95% CI
	1 321 366	80.1	286 717	17.4			40 909	2.5		
Mode of delivery <sup>a</sup>										
Spontaneous	1 055 271	79.9	226 451	79.0	0.96	0.95-0.97 <sup>#</sup>	30 515	74.6	0.75	0.73-0.76 <sup>#</sup>
Operative vaginal delivery	150 232	11.4	25 125	8.8	0.79	0.78-0.79 <sup>#</sup>	3707	9.1	0.78	0.76-0.81 <sup>#</sup>
Fetal distress	39 464	3.0	7396	2.6	0.88	0.86-0.90 <sup>#</sup>	1191	2.9	0.98	0.92-1.03
Arrest of labor	92 212	7.0	14 403	5.0	0.75	0.73-0.76 <sup>#</sup>	1994	4.9	0.69	0.66-0.72 <sup>#</sup>
Fetal distress and arrest of labor	15 602	1.2	2827	1.0	0.86	0.83-0.89 <sup>#</sup>	439	1.1	0.91	0.83-0.999
Cesarean section	115 863	8.8	35 141	12.3	1.35	1.34-1.36 <sup>#</sup>	6687	16.3	1.98	1.93-2.03 <sup>#</sup>
Elective	32 730	2.5	14 941	5.2	1.80	1.78-1.82 <sup>#</sup>	2902	7.1	2.84	2.74-2.95 <sup>#</sup>
Fetal distress	16 778	1.3	4583	1.6	1.21	1.18-1.24 <sup>#</sup>	1034	2.5	1.96	1.84-2.08 <sup>#</sup>
Arrest of labor	51 408	3.9	11 412	4.0	1.02	1.00-1.04	1889	4.6	1.19	1.14-1.24 <sup>#</sup>
Fetal distress and arrest of labor	9340	0.7	2421	.8	1.16	1.12-1.20 <sup>#</sup>	480	1.2	1.64	1.50-1.79 <sup>#</sup>
Neonatal characteristics										
Male	674 001	51.0	146 583	51.1	1.00	0.997-1.01	20 731	50.7	0.99	0.97-1.01
Birthweight										
≥4000 g	219 662	16.6	57 370	20.0	1.20	1.19-1.21 <sup>#</sup>	7627	18.6	1.14	1.12-1.17 <sup>#</sup>
≥4500 g	36 244	2.7	10 600	3.7	1.28	1.26-1.30 <sup>#</sup>	1382	3.4	1.23	1.17-1.30 <sup>#</sup>

<sup>a</sup>Separate items do not add to total % in mode of delivery, due to missing numbers.<sup>#</sup>P < .001.

35-39 and  $\geq 40$ , respectively) or arrest of labor (3.9%, 4.0% and 4.6%, respectively).

Adverse perinatal and maternal outcomes are shown in Table 3. Composite adverse perinatal outcome was found in 1.6% of women aged 18-34 years, 1.7% of women aged 35-39 years (RR 1.06, 95% CI 1.03-1.08,  $P < .001$ ) and 2.2% of women aged  $\geq 40$  years (RR 1.38, 95% CI 1.29-1.47,  $P < .001$ ). A 5-minute Apgar score  $< 7$  was the main contributor to this composite outcome. Composite adverse maternal outcome was found in 4.6% of women aged 18-34, 5.0% of women aged 34-39 (RR 1.08, 95% CI 1.06-1.10,  $P < .001$ ) and 5.2% of women aged  $\geq 40$  (RR 1.14, 95% CI 1.09-1.19,  $P < .001$ ). Postpartum hemorrhage was the main contributor to this composite outcome.

Table 4 shows the association of AMA stratified by gestational age, parity and onset of labor with the composite adverse perinatal and maternal outcome in each age category. The incidence of both composite adverse perinatal and maternal outcome increased in women with AMA, irrespective of gestational age, parity or onset of labor, though the absolute risk difference is small and did not always reach statistical significance. Women with a higher gestational age and nulliparous women are more at risk for composite adverse perinatal or maternal outcomes, irrespective of maternal age. Women with a spontaneous onset of labor have a lower risk for composite adverse perinatal or maternal outcome in comparison with all other "onset of labor", except for women  $\geq 40$  years having an elective CS. Composite perinatal and maternal outcomes were more strongly associated with gestational age than AMA was. For example, the risk difference between a gestational age of 42 weeks + 0 days to 42 weeks + 6 days and 37 weeks + 0 days to 40 weeks + 6 days on a composite adverse perinatal outcome is 0.9% in women aged 18-34 years, 0.9% in women aged 35-39 years and 0.7% in women aged  $\geq 40$  years. These

risk differences between gestational ages are slightly larger than the risk differences between the maternal age groups on composite adverse perinatal outcomes. The risk difference between women aged 18-34 and  $\geq 40$  is 0.6% in women with a gestational age of 37 weeks + 0 days to 40 weeks + 6 days, 0.8% in women with a gestational age of 41 weeks + 0 days to 41 weeks + 6 days and 0.4% in women with a gestational age of 42 weeks + 0 days to 42 weeks + 6 days. Induction of labor was associated with an increased risk for composite adverse perinatal and maternal outcomes. Induction of labor in comparison with spontaneous onset of labor was more strongly associated with adverse outcomes than AMA was.

AMA is significantly associated with a higher incidence of CAPO ( $P < .001$ ) after adjustment for parity, onset of labor and gestational age. Compared with women aged 18-34 years, risk ratios were 1.53 (95% CI 1.43-1.63) for women  $\geq 40$  years and 1.22 (1.18-1.25) for women aged 35-39 years. AMA is also significantly associated with a higher incidence of CAMO ( $P < .001$ ) after adjustment for parity, onset of labor and gestational age. Compared with women aged 18-34 years, risk ratios were 1.21 (95% CI 1.16-1.27) for women  $\geq 40$  years and 1.17 (95% CI 1.15-1.19) for women aged 35-39 years.

## 4 | DISCUSSION

In our cohort, we found an increase of both composite adverse perinatal and maternal outcomes in both advancing maternal age and increasing gestational age. However, the association between gestational age and composite adverse perinatal and maternal outcomes was slightly stronger than the association with AMA. In general, the absolute risk of a serious event remains low and the differences between the different age groups are small.

**TABLE 3** Composite adverse perinatal and maternal outcomes

	Maternal age									
	18-34 (ref)		35-39		RR	95% CI	$\geq 40$		RR	95% CI
	n	%	n	%			n	%		
Composite adverse perinatal outcome	20 629	1.6	4778	1.7	1.06	1.03-1.08 <sup>b</sup>	884	2.2	1.38	1.29-1.47 <sup>c</sup>
Stillbirth	2211	.17	619	.22	1.22	1.15-1.32 <sup>b</sup>	122	.30	1.74	1.47-2.07 <sup>c</sup>
Neonatal death <sup>a</sup>	684	.05	154	.05	1.03	0.70-1.19	22	.05	1.04	0.69-1.57
Meconium aspiration syndrome <sup>a</sup>	1168	.09	291	.10	1.12	1.01-1.24	62	.15	1.69	1.32-2.15 <sup>c</sup>
5-min Apgar score $< 7$ <sup>a</sup>	12 229	.93	2748	.96	1.03	0.997-1.07	531	1.30	1.40	1.28-1.52 <sup>c</sup>
Neonatal intensive care unit <sup>a</sup>	4362	.33	1125	.39	1.15	1.09-1.21 <sup>b</sup>	199	.49	1.46	1.27-1.67 <sup>c</sup>
Sepsis <sup>a</sup>	6172	.47	1429	.50	1.06	1.01-1.107	252	.62	1.30	1.16-1.48 <sup>c</sup>
Composite adverse maternal outcome	60 196	4.6	14 261	5.0	1.08	1.06-1.10 <sup>b</sup>	2 123	5.2	1.14	1.09-1.19 <sup>c</sup>
Maternal death	38	.003	12	.004	1.35	0.62-2.20	0	.000	Not calculable	
Placental abruption	261	.020	68	.024	1.16	0.94-1.43	14	.034	1.70	1.02-2.63
Postpartum hemorrhage $> 1000$ mL	59 972	4.5	14 204	5.0	1.08	1.06-1.09 <sup>b</sup>	2 113	5.2	1.14	1.09-1.19 <sup>c</sup>

<sup>a</sup>Live birth.

<sup>b</sup> $P < .001$  between 18-35 and 35-39 y.

<sup>c</sup> $P < .001$  between 18-35 and  $\geq 40$  y.

**TABLE 4** Association of advanced maternal age with adverse outcome stratified by gestational age, parity and onset of labor

	18-34 y (ref)		35-39 y		RR	95% CI	≥40 y			
	n	%	n	%			n	%	RR	95% CI
Composite adverse perinatal outcome	20 629	1.6	4778	1.7	1.06	1.03-1.08 <sup>a</sup>	884	2.2	1.38	1.29-1.47 <sup>a</sup>
Gestational age										
37 <sup>+0</sup> -40 <sup>+6</sup> wk	14 234	1.4	3334	1.6	1.06	1.03-1.10 <sup>a</sup>	616	2.0	1.38	1.28-1.49 <sup>a</sup>
41 <sup>+0</sup> -41 <sup>+6</sup> wk	4828	1.8	1069	1.8	1.02	0.97-1.08	206	2.6	1.42	1.24-1.63 <sup>a</sup>
42 <sup>+0</sup> -42 <sup>+6</sup> wk	1567	2.3	375	2.5	1.10	1.01-1.21	62	2.7	1.21	0.94-1.55
Parity										
Nulliparous	12 907	2.0	1980	2.8	1.35	1.29-1.40 <sup>a</sup>	335	3.6	1.76	1.58-1.96 <sup>a</sup>
Multiparous	7722	1.1	2798	1.3	1.11	1.08-1.15 <sup>a</sup>	549	1.7	1.53	1.41-1.66 <sup>a</sup>
Onset of labor										
Spontaneous onset of labor	15 424	1.4	3366	1.4	1.05	1.01-1.08	592	1.9	1.37	1.26-1.48 <sup>a</sup>
Induction of labor	4581	2.9	1165	3.0	1.03	0.98-1.09	247	3.6	1.26	1.12-1.43 <sup>a</sup>
Elective SC	624	2.1	247	1.8	0.91	0.82-1.01	45	1.8	0.85	0.64-1.13
Composite adverse maternal outcome	60 196	4.6	14 261	5.0	1.08	1.06-1.10 <sup>a</sup>	2123	5.2	1.14	1.09-1.19 <sup>a</sup>
Gestational age										
37 <sup>+0</sup> -40 <sup>+6</sup> wk	40 576	4.1	9886	4.6	1.10	1.08-1.12 <sup>a</sup>	1471	4.8	1.17	1.11-1.23 <sup>a</sup>
41 <sup>+0</sup> -41 <sup>+6</sup> wk	15 027	5.6	3323	5.7	1.02	0.99-1.05	485	6.0	1.08	0.99-1.18
42 <sup>+0</sup> -42 <sup>+6</sup> wk	4593	6.6	1052	7.1	1.07	1.01-1.13	167	7.4	1.12	0.96-1.31
Parity										
Nulliparous	33 418	5.3	4808	6.9	1.28	1.25-1.32 <sup>a</sup>	661	7.0	1.35	1.25-1.46 <sup>a</sup>
Multiparous	26 778	3.9	9453	4.4	1.09	1.08-1.11 <sup>a</sup>	1462	4.6	1.19	1.13-1.25 <sup>a</sup>
Onset of labor										
Spontaneous onset of labor	49 235	4.4	10 952	4.7	1.07	1.05-1.08 <sup>a</sup>	1537	4.9	1.12	1.07-1.18 <sup>a</sup>
Induction of labor	9629	6.0	2659	6.8	1.11	1.07-1.15 <sup>a</sup>	452	6.6	1.11	1.01-1.22
Elective SC	1332	4.5	650	4.9	1.05	0.99-1.12	134	5.3	1.17	0.99-1.38

<sup>a</sup>P < .001 between 18-35 and 35-39 y.<sup>b</sup>P < .001 between 18-35 and ≥40 y.

Internationally, there is no predefined reference group of maternal age and no official definition of "advanced maternal age" or an "age interval" between groups which makes a clear comparison with the literature difficult.<sup>1-4,11,27-30</sup> Most studies and guidelines use a reference group ≥18 or ≥20 years of age, or define AMA at ≥35 or ≥40 years and use a 5-year age interval between groups in sub-analyses. To make our study more comparable to the existing literature, we chose to evaluate the risks in women aged 18-34, 35-39 and ≥40 years.

Of all women in our cohort, 19.9% had a maternal age of 35 years or older, which is higher than in the WHO multicountry survey on maternal and newborn health in women from 29 countries in Africa, Asia, Latin America and the Middle East (12.3%)<sup>4</sup> but more comparable to studies in high-income countries.<sup>3,28</sup> Our results are applicable to low-risk women with white ethnicity in high-income countries with similar baseline characteristics.

When adding up the risks for late-term and postterm pregnancy, we did not find age ≥40 years to be a risk factor for late-term pregnancy 41 weeks + 0 days. As described in a retrospective cohort study from 1995 to 1999 in 199 162 term women showing an odds ratio (OR) of 1.07 (95% CI 1.02-1.12) for AMA on late-term pregnancy.<sup>16</sup> This difference can be due to a higher rate of induction of labor in women with AMA in our cohort, which decreases the number of women who can reach a higher gestational age or may be due to the fact that we studied a predefined low-risk population.

We showed an increase in risk of cesarean section overall and on all components separately in women with AMA. In two population-based cohorts (in the UK and the USA) containing 214 296 and 78 880 women, respectively, the proportions of cesarean section increased in both elective and overall cesarean section as well in multi- and nulliparous women. We found a much lower absolute

incidence of elective cesarean section, which is possibly due to the absolute lower rate of cesarean section in the Netherlands (around 12.5% in 2000 and 16.8% in 2010).<sup>3,8,31</sup> Despite the lower incidence in our cohort, women  $\geq 40$  years of age received an elective cesarean section more often than woman aged 18-35 did, possibly indicating a lower threshold for performing a cesarean section in women with AMA. This observation could also be due to more parous women with a previous cesarean section in the AMA group. Since we did not have access to the complete Perined database but only to our requested frequencies and outcomes, we were not able to find evidence for our speculations. In our cohort, AMA is associated with an increase in emergency cesarean section (defined as fetal distress and/or arrest of labor) in both nulli- and multiparous women, which is in concordance with several other studies.<sup>2,12,32-35</sup> In our cohort, the impact of increasing maternal age on cesarean section as mode of delivery is larger if fetal distress was the indication for cesarean section than if the indication was arrest of labor. In absolute numbers, the incidence of an emergency cesarean due to arrest of labor is higher than cesarean due to fetal distress. Induction of labor in women with AMA showed no significant increase of cesarean section rates in more recent studies.<sup>27,29</sup>

The components of the composite adverse perinatal and maternal outcome are considered to be clinically relevant and reliably entered in the database, though the content of this composite outcome can be discussed. Composite adverse perinatal outcome was significantly more often present in women with AMA, 5-minute Apgar score  $< 7$  being the factor which contributed most to this outcome. After approval of our study, the American College of Obstetricians and Gynecologists (ACOG) Committee published an update of their Committee opinion on the use and interpretation of the Apgar score in which a 5-minute Apgar score  $< 4$  is considered a nonspecific sign of illness which "may be one of the first indications of encephalopathy". The ACOG recommends using this lower cut-off in outcome studies instead of a 5-minute Apgar score  $< 7$ .<sup>36</sup> We did not have data on the 5-minute Apgar score  $< 4$ , though this has most probably led to a decrease in the absolute risk of the composite adverse perinatal outcome. Sepsis is the second factor contributing most to the composite adverse perinatal outcome, although maternal age is not a known risk factor for sepsis. One other study using a population-based cohort in Denmark containing 369 516 women, addressed the composite adverse perinatal outcome by combining chromosomal abnormalities, congenital malformation, miscarriage, stillbirth and birth before 34 weeks of gestation. They found an increase in this composite outcome in women aged 35-39 years (7.0%) and  $\geq 40$  years (10.8%) in comparison with women aged 20-34 years (5.5%).<sup>28</sup> In our cohort, stillbirth is seen more often in women with AMA, with an absolute risk between 0.2% and 0.3%, which is comparable to other studies in high-income countries in women with white ethnicity.<sup>3,6,37,38</sup> In a retrospective cohort study in the USA that included 37 504 230 women, there was an increase in rates of stillbirth from age  $\geq 35$ .<sup>11</sup> In a systematic review and meta-analysis in women aged  $\geq 35$  years,

an increased risk of stillbirth was seen in comparison with the reference group (OR 1.75, 95% CI 1.62-1.89).<sup>39</sup> Most stillbirths in AMA are explained by congenital abnormalities.<sup>40</sup> Stillbirths in our study, however, should not be attributable to congenital abnormalities, since we excluded all neonates with a congenital anomaly. However, misclassification of congenital anomalies cannot be ruled out.<sup>41</sup> We found no difference in neonatal death, as described by others, possibly due to the low incidence of neonatal death in our cohort.<sup>39</sup>

Composite adverse maternal outcome was seen significantly more in women with AMA, with postpartum hemorrhage  $> 1000$  mL as the most contributing factor. Uterine atony accounts for most cases of postpartum hemorrhage.<sup>42</sup> We were not able to differentiate between the multiple etiologies for postpartum hemorrhage in our study based on the Perined data. We found no increase in maternal death, which is a rare outcome in high-income countries, whereas in both low- and high-income countries an increase in maternal death is described with AMA.<sup>4,37</sup> Adverse maternal outcomes such as placental abruption have been studied before and have been associated with AMA.<sup>39,43</sup> In our study, we did not find a relation between AMA and placental abruption, probably due to the low incidence of this outcome.

The Royal College of Obstetricians and Gynaecologists' opinion paper on induction of labor at term in older mothers provides an argument for offering induction of labor at 39-40 weeks of gestation to women  $\geq 40$  years of age because of an increased risk of, for example, stillbirth. This practice would reduce both perinatal and maternal adverse outcomes, but they raise awareness of the effect of induction of labor in women of AMA.<sup>44</sup> In addition, the 35/39 trial found that, among nulliparous women aged  $\geq 35$  years, induction of labor at 39 weeks of gestation had no significant effect on rate of cesarean section or on other adverse perinatal and maternal outcomes, as compared with expectant management.<sup>29</sup> In our cohort study, we showed that the risks on adverse perinatal or maternal events increase in late- and postterm pregnancies, irrespective of maternal age, although women aged  $\geq 40$  carried the highest risk of an adverse outcome. This implies that they probably would benefit from labor induction before 41 weeks + 0 days of gestation. Our findings could be helpful in the process of shared decision-making weighing different management strategies in low-risk women with AMA and/or increasing gestational age.

The Perined database consists of all types of maternal and perinatal characteristics and pregnancy outcomes.<sup>8</sup> We used perinatal and maternal birth outcomes to create a composite adverse perinatal and maternal outcome which represents a clinically relevant adverse outcome. We excluded women with gestational diabetes. Since the prevalence of gestational diabetes in the study period was expected to be 5%, and we excluded 14 809 (.8%) of women with gestational diabetes, we could not rule out the possible influence of women with (unreported) gestational diabetes in our cohort. We could not use data on perinatal high care admission, cephalic hematoma, umbilical cord pH, plexus brachialis lesions, shoulder dystocia

and maternal obstetric anal sphincter injuries because these items are not registered systematically (free entry field) in the database or are known for underreporting. We were also not able to define the indications to induce labor and therefore we could not assess possible associations between induction of labor and composite adverse perinatal outcomes. Risk factors for adverse perinatal and maternal outcome such as smoking and body mass index were not entered in the Perined registration before 2011. Therefore, we were not able to make statements on these risk factors. We used data from a historical cohort from 1999 to 2010 because after 2010 the coding in the Perined registration system changed. Therefore, the newer database could not yet be combined with our data. Data should also be interpreted in the light of changing policy in term and late-term pregnancy in the Netherlands to more frequent induction of labor at 41 weeks + 0 days of gestation.<sup>45-47</sup>

We are aware of the limitations and pitfalls of using national register-based data.<sup>24,41</sup> One of the major pitfalls, besides the historical cohort as mentioned earlier, is the representation of our cohort for the Dutch and high-income countries. These findings may therefore not apply to other maternity care settings. Another limitation could be that we excluded women with high blood pressure and gestational diabetes, both of which occur more often in women with AMA and are associated with adverse outcomes. Therefore, we excluded women who would have been at a higher risk on adverse perinatal outcomes, thereby underestimating the effect of AMA on adverse perinatal outcomes.

The strength of our study is that we could use a large nationwide cohort which still contained data on pregnancies  $\geq 42$  weeks + 0 days. Therefore, our study could determine the association of gestational age and maternal age with composite adverse perinatal and maternal outcome.

## 5 | CONCLUSION

In low-risk women, the risk of adverse pregnancy outcomes increases with advancing maternal age. When adjusted for parity, onset of labor and gestational age, AMA is associated with an increase in both composite adverse perinatal and maternal outcomes. Women aged  $\geq 40$  have an increased risk of adverse perinatal and maternal outcomes when pregnancy goes beyond 41 weeks, though the absolute risk of perinatal death is low. Our conclusions can help clinicians to inform women of AMA to guide clinical decision-making.

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### CONFLICT OF INTEREST

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